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A Study of Reading Achievement in Terms of Various Background Factors.

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A STUDY OF READING ACHIEVEMENT IN TERMS OF VARIOUS BACKGROUND FACTORS

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To Ray who helped me finish what
I started--

To Dr. Cheek who argued, encouraged,
suggested and cared--

To Jan, Cindy and Dorothy, the
classroom teachers who
made this a team effort--

Thank you!

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ABSTRACT

A STUDY OF READING ACHIEVEMENT IN TERMS OF VARIOUS BACKGROUND FACTORS

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This study was designed to evaluate reading achievement in terms of treatment, (direct concept teaching), and non-treatment, controlling for socioeconomic group, preschool attendance and the level of maternal education. The study population was composed of 117 children in six kindergarten classes in six schools in East Baton Rouge Parish, Louisiana. Two schools were chosen at each socioeconomic level to allow for a treatment school and a control school. One class was used at each school. Schools representing the low, middle and high levels were determined by the percentage of children receiving free lunch at the school. Schools classified as high level had less than 10 percent of their population receiving free lunch. Schools classified as middle level had between 45 and 60 percent of their children receiving free lunch. Schools classified as low each had over 90 percent of their population receiving free lunch. In addition, school records were used to determine whether the child had attended preschool and whether the mother had completed high school or had post high school education.

Instruments used in the study were the Boehm Test of Basic Concepts, Form B and the Metropolitan Readiness Test, Level II, Form P, Pre-Reading Composite.

Five hypotheses were tested:

1. There is no significant difference between the means of the treatment group and the means of the control group on the Boehm Test.

2. There is no significant difference between the means of the treatment group and the means of the control group on the MRT.

3. There is no significant relationship between the scores of the Boehm Test and the MRT among classes and between groups.

4. There is no significant relationship between the level of maternal education and scores on the Boehm Test for the treatment group and the control group.

5. There is no significant relationship between preschool attendance and scores on the Boehm Test.

Acceptance or rejection of the hypothesis depended upon socioeconomic group. Hypothesis 1 was accepted at the high socioeconomic level but rejected at the low and middle level. Hypothesis 2 was rejected at the high level but accepted at the low and middle level. Hypothesis 3 was rejected for all treatment classes and the middle level control class but accepted for the low and high control classes. Hypothesis 4 and 5 were accepted.

Conclusions of the study were:

1. Direct concept instruction in the concepts of space, quantity and time is effective in raising the scores of children on a concept test of these measures.

2. There is a positive relationship between direct concept instruction and reading achievement.

3. Concept instruction using manipulatives is effective.

4. There is some relationship between the level of maternal education and concept achievement of the child.

5. Preschool attendance has no measurable effect on concept knowledge of the child.

CHAPTER 1

INTRODUCTION

This study was intended to investigate several factors which are related to reading achievement. These factors are divided into two main areas, first, direct concept instruction and second, background factors related to both concept development and reading achievement--pre-school attendance and maternal socialization practices. Research during the past ten years suggests that there is a causal link among socioeconomic background and reading achievement. Therefore this research was conducted in kindergarten classes at three socioeconomic level schools in order to see if treatment composed of direct instruction in the concepts of space, quantity and time made a difference in reading achievement scores at each of three socioeconomic levels.

Research indicates that there are differences in the way that mothers of various socioeconomic levels socialize their children. Research also indicates that these socialization differences may make a difference in the expressed stage progression of their children. Developmental stage progression is based on the developmental theories of Jean Piaget which suggest that cognitive development is based on maturation and the evolution of competencies as well as the

development of internal cognitive structures through the learner's transformations on the environment. According to Piaget all children pass through the same invariant sequence of development, although cultural and other differences may alter to some degree the age at which each of these stages appears. Piaget describes the four developmental stages of cognition as that of sensory motor, pre-operations, concrete operations and formal operations. Kohlberg and Mayer (1978) suggest that developmental change can occur either naturally or through planned instruction. Developmental stage theory is more fully explained in the section, Theoretical Framework. Kohlberg goes on to say that since only about one-half of the adult population reaches the level described by Piaget as formal operations, development is not inevitable.

This study attempted to investigate whether direct concept teaching has any effect on reading scores when two other factors, preschool attendance or the lack of preschool attendance, and the level of maternal education described as years of education "below graduation," "high school graduation" or "post high school" were used as control factors to classify data. In addition the data was analyzed according to the socioeconomic level of the school as determined by percentages of children receiving free lunches, described as low, medium, or high.

Importance of the Study

Early research by Smith (1950) highlighted a well known fact, all children do not come to school with the same

experiences, genetic background or cultural environment. This fact has not changed during the subsequent 30 years although many programs have been written, much research undertaken, and many theories put forth in order to mediate these differences. Still, children from the lower socioeconomic groups do not do as well as their middle class peers on tests of reading achievement.

Since 1970, there has been a large growth both in the number of children attending kindergarten and in the number of children attending preschool. In spite of this increase in attendance, a corresponding rise in reading achievement test scores has not occurred, especially at the lower socioeconomic levels. Barton (1963:174) in his address to the National Reading Council stated that "the most important single factor in progress in reading in school is socioeconomic." Thus, it would seem the major criterion for the kindergarten curriculum should be how best to facilitate learning for every child regardless of socioeconomic status.

John Downing (1971) postulated that effective kindergarten curriculum included the factors of cognitive development, physiological development, emotional and environmental development. The major component within the scope of the school is the cognitive area. The leading theorist in the field of cognitive development is Piaget; yet little work has been done in attempting to translate his theories into instructional practices. His contribution according to Bruner (1947) was to develop the intellectual tasks which

translate thought into action. The cognitive developmental theory of Piaget which stresses the importance of the interaction of genetic endowment with environmental experiences seems to educators to represent a logical theory to consider in studying the kindergarten curriculum.

Research such as that by Cox (1976), Roberts (1976), and Brekke and Williams (1975) indicates that there is a relationship between mastery of the quantity concepts and reading achievement. Piagetian theory postulates that conservation--the ability to understand that objects or quantities remain the same even though there is a change in their physical appearance, is a concept that develops slowly during the preoperations stage. Piaget stresses that understanding of conservation is facilitated by the child's manipulation of concrete objects. Kohlberg and Mayer (1978) suggest that the ability to conserve can be stimulated by instruction. Boehm (1971) suggests that the concepts of time and space are commonly found in test directions and instructional materials. It would therefore seem logical that children be instructed by means of concrete objects combined with language experiences descriptive of space, quantity and time, particularly if their home or early environmental experiences have not provided the necessary concept stimuli.

This study is important in that it attempted to examine instruction in a discrete area (concepts of space, quantity and time) in order to see if such discrete instruction

could improve reading test performance in three kindergarten classes at three socioeconomic level schools.

Background for the Study

Reading achievement has been the most successful in the American educational system for the middle class child in the middle class school. A truism frequently stated is that it is the so called hidden curriculum of the middle class home that facilitates the progress or development of the middle class child. Bronfenbrenner in his analysis of the Coleman report (1970) indicated that the only exception to this progress is the case of the southern black child. For this child school is more important than home in facilitating development. The report also states that other factors important in intellectual development as measured by standardized tests are: (1) family background, (2) school characteristics, (3) teacher characteristics, and (4) the most important--characteristics of the children attending the same school. The findings of this report indicate that school can make a difference in intellectual development for the low socioeconomic child. A further analysis of the report indicated that the beneficial effect for the disadvantaged child is increased substantially when a larger proportion of the class is categorized as non-disadvantaged. Thus the implications are that the socialization practices of the middle class are important for school achievement. Identification of middle class behaviors which enhance

learning is just beginning. Research by Beller (1978), Smilansky (1977), and Shipman (1977) indicates that research in this field is needed.

During the past two decades emphasis has been placed on early childhood learning and how the variables of economics, socialization practices and intellectual development affect preschool children. Recently, a great deal of research emphasis has been placed on the stage development theory of Piaget. Singer and Revenson (1976) in their research based on Piagetian theory indicate that concept development, particularly the concepts of space, quantity and time can be enhanced by instruction. In 1970 Butler mentioned in his research that, although there was a need for differentiated instruction for different socioeconomic groups the process of such instruction had not been determined. Direct concept instruction in this study investigates this process. Cutts (1963:24) phrased it well, "school enrichment programs may never be able to compensate for the deficiencies in the experiences and training provided by the home. Nevertheless, such programs may go a long way toward overcoming the handicap of a poor start."

Theoretical Framework

The theoretical framework for this research was the stage development theory of Piaget. Cognitive developmental theory in general is based on the Dewey-Piagetian conception of cognition, which often states that cognition is the concept of structures--internally organized wholes or systems of

internal relations. Kohlberg and Mayer (1978:131) state that,

> Events in a child's life are organized actively through cognitive connecting processes rather than through external repetition and association... Cognitive development is a dialogue between the child's structures and the structures of the environment.

This theoretical school of thought suggests that there are two parallel functions that cause changes in the internal structures, cognitive and affective development. Socialization or interaction is essential for development. As Kohlberg and Mayer (1978) explain cognitive developmental theory there are certain characteristics that are found in each of the four developmental stages described by Piaget as sensory motor, preoperations, concrete operations, and formal operations. These characteristics are as follows:

1. There are distinct and qualitative differences in the child's method of solving problems.

2. These characteristics or modes of thinking are invariant or unchanging in their sequence for all children, even though environmental factors may change the rate of onset.

3. Each mode of thought forms a "structural whole" or schema. This schema represents an underlying thought pattern.

4. Each developmental stage is sequential and differentiated.

This invariant sequence of development is the reason for the description by both Almy and Piaget that childrens' thinking is different from adults. According to Kohlberg and Mayer (1978:133) "experience is essential to stage progression...Richer stimulation leads to faster advance through the series of stages."

Kohlberg (1978) goes on to suggest that the educational rationale that underlies instruction is fourfold: attention should be paid to the child's mode or stage of thought, instruction should be appropriate to this mode, there should be a definite instructional attempt to arouse the student to see conflict or problems with his stage of problem solution, and finally, the teacher must provide experiences which facilitate the development of new problem solving thought processes.

Direct instruction in concept development might be an educational instructional method that would facilitate these four assumptions. Mastery of the concepts of space, quantity and time are necessary for school achievement. Ebel (1969:196) suggests that "culture and experience determine the meaning assigned to concepts and determine what concepts need to be learned." Understanding of these concepts appears to differ among socioeconomic groups.

Piagetian theory thus suggests that although stage development is invariant, progress through the stages can be accelerated or retarded by the type of instruction, interaction (socialization) and environmental experiences that

take place at each stage of development.

In stage theory the first two stages, sensory motor and preoperations, are regarded as intuitive stages; while the latter stages of concrete and formal operations are characterized by logic. During the sensory motor stage (birth - 2 years) the child develops reflexes, object relations and object consistency. During the stage of preoperations (2 - 7 years) the child acquires language, and he is able to understand that words are both symbolic themselves and of something else. The child reasons intuitively based on his perceptions. He is egocentric. In addition, his thought processes are characterized by centration, that is to say he focuses on only one aspect of a situation at a time. The object is seen only in relation to its particular function. Thought processes are not reversible. This stage is subdivided into early and late preoperation. Language is the predominant process development of the early stage, while during the late stage of preoperations other characteristics emerge.

During the third stage, concrete operations, the child masters conservation, reversibility, and concrete problem solving. "The child can form and hold mental representations or a series of actions and simultaneously reason about the relationship of a whole to its parts" (Woodward, 1977:2). The major difference between this stage and that of formal operations is that actions are overt or concrete rather than abstract. During the final stage, formal opera-

tion, the child learns to think abstractly, develop hypotheses, and use logic and deductive thinking. The last two stages are characterized by the development of logical thought processes. Many children do not reach the stage of formal operations.

Conservation described by Wadsworth (1971:76) as "the concept that the amount or quantity of matter stay the same regardless of changes in shape or position," is a slowly evolving concept or characteristic that begins in the stage of preoperations. Frequently children are referred to as the non-conserver, the transitive conserver, or the child who has mastered conservation principles, the natural conserver. As the child learns to conserve, the structure of his thinking matures. Piaget suggests, according to Singer and Revenson, that formal schooling is rarely responsible for the development of conservation. Instead it usually occurs as part of the child's general experiences. However, the research of Kohlberg (1978) suggests that conservation can be facilitated by instruction. Kindergarten children in different social strata frequently operate at different conservation levels.

An opinion that is slightly different from either Piaget or Kohlberg and Mayer's is that of Bruner's (1964), who suggests that although Piaget has contributed to knowledge in the field by designing intellectual tasks which translate thought into action it is the mechanism of language which activates conservation. This is in contrast to the

idea that conservation is a naturally occurring process. However, both Piaget and Bruner agree on the importance of conservation in stage acquisition.

The Piagetian theory that explains what prompts developmental stage progression is equilibration. This theory is the major theory of the school of genetic epistemology founded by Piaget. This theory postulates that equilibrium or equilibration is necessary for progress through the developmental stages. Wadsworth (1971) suggests that equilibration is an internal self-regulating system that operates to reconcile the factors of maturation, experience and social interaction. It is the result of the four steps described earlier by Kohlberg. It is the balance between assimilation and accommodation.

Assimilation and accommodation are the terms given to the processes which allow the individual to take in new stimuli and accommodate it to his present structure or schema or change existing schemas to fit a new situation. Schema is the developmental mode or structure, or the individual's way of organizing information. According to Piaget equilibration, maturation, experience and socialization are necessary for cognitive development to take place.

Piaget states that the onset of development may differ for different children depending on cultural factors. A major part of cultural transmission is the socialization of mother and child. Streissguth (1972) studied mother-child interactional differences between middle and lower socio-

economic groups. Significant differences were found in regard to the type of interaction. Findings were this: (1) middle class mothers did not become as intrusive in children's tasks as did lower class mothers, (2) the middle class child demonstrated more persistence and less impulsiveness in task solutions, (3) the middle class child was better able to generalize across tasks than the lower class children. This third factor is necessary for the development of conservation. It would appear from this research that middle class mothers' were better able through their socializing processes to teach conservation.

Studies by Cox, Brekke, and Scott have found that the ability to conserve has a significant effect on reading readiness and achievement. The major intellectual task of kindergarten is the development of readiness for reading (Downing, 1971). Concept development, the instructional task of cognitive developmental theory (Singer and Revenson, 1978) may be of use in planning kindergarten instruction in several ways. First, an instructional plan that can mediate differences in educational performance between socioeconomic groups is needed. Second, cognitive developmental theory offers a suggested framework for analyzing and treating this performance difference by its inclusion of the need for interaction of the four kindergarten readiness factors described by Downing (1971) as the intellectual, the environmental, the emotional and the physiological factors.

Statement of the Problem

The problem is to evaluate reading achievement at the kindergarten level in terms of treatment (direct concept teaching) and non-treatment, controlling for socioeconomic group, the level of maternal education and preschool attendance.

Definition of Terms

Accommodation. This is the process by which the child attempts to fit a new stimulus into his existing scheme or pattern of behavior. The child either creates a new scheme for the stimulus or modifies an existing scheme. This results in a change or development of the scheme. Accommodation accounts for a qualitative change in development.

Adaptation. This the process of using the environment to learn and learning to adjust to changes in the environment.

Assimilation. This the cognitive process by which the child integrates new perceptual stimuli into existing schemes or patterns of behavior. It accounts for quantitative change.

Concept Development. A two stage paradigm which includes the initial stimuli, the mediating stimuli and responses, and the termination response. This is the definition of Albert Goss (Ebel: 1969). In this study it is applied to the concepts of space, quantity and time as they relate to prereading activities. Concepts are a component of reading achievement tests.

Equilibration. This is the task of attaining equilibrium. It is the internal process that operates to reconcile maturation, experience, and social interaction. It is the balance between assimilation and accommodation.

Conservation. The ability to see that objects remain the same despite a change in physical appearance.

Invariance. The course of cognitive development (structures) is the same for all children although the ages at which they attain these structures may vary with intelligence and environment.

Preoperational Stage. This is the stage of development in which the child is not yet able to think logically. Although with the acquisition of language the child can represent the world through mental images and symbols, these symbols depend on his perceptions as seen only from his point of view. This stage is divided into two stages, the preconceptual, (ages 2-4) and the perceptual or intuitive period, (ages 4-7).

Preschool. Organized experiences for children prior to entering kindergarten. These experiences may be classified as nursery school, play groups, day care or Head Start programs.

Reading Achievement. A measure of a pupil's ability to read as measured by the Metropolitan Readiness Test, Level II. This test measures a diverse range of prereading skills necessary for beginning reading which include language, auditory, visual and quantitative concepts.

Reading Readiness. The willingness to engage in a given activity dependent upon maturity, previous experience and mental and emotional set. It includes the categories of intellectual development, environmental development, emotional development and physiological development. It is also used to describe kindergarten instruction.

Scheme or Schema. This is a mental image or pattern of action. It is the form of organizing information.

Socialization. The process by which a society trains its children to be adults.

Limitations of the Study

This study was limited by the following five factors:

1. The population consisted of six kindergarten classes in East Baton Rouge Parish, Louisiana. The population was drawn from two classes in each of three socioeconomic groups. The designation of a school as being representative of a particular socioeconomic group was based upon the percentage of children within the school receiving free lunch. Thus there was some socioeconomic similarity among individual children in each school, although the number of such cases was presumed to be too small to affect statistical averages.

2. Individuals within the schools were or were not representative of the designated socioeconomic group. The low income of the parent which entitled the child to receive free lunch may have been of limited duration. The reasons

for low parental income were not controlled for in this study.

3. The willingness of parents to accurately respond to the questions of preschool attendance for their child and to the level of education they possess was not controlled for in this study nor was the accuracy of data reported by others.

4. The instruction in this study was of limited duration. It consisted of 12 hours of direct concept instruction over a period of three months. Each lesson was one-half hour in length.

5. No attempt was made to control for the home socializing factors of number of siblings, quality of parent/child interaction, or the adult/child ratio in the treatment and control groups. Class size ranged from 18 to 25 children.

Hypotheses

There is no statistically significant difference at the 0.05 level of confidence between:

1. The means of the control groups and the treatment groups at each of three socioeconomic levels on the Boehm Test of Basic Concepts.

2. The means of the control groups and the treatment groups at each of three socioeconomic groups on the Metropolitan Readiness Test, Level II, Form P Pre-Reading Skills Composite.

3. There is no statistically significant relationship at the 0.05 level of confidence between the scores of the Boehm Test of Basic Concepts, Form B, and the scores on the Metropolitan Readiness Test, Level II, Form P Pre-Reading Skills Composite among classes and between groups.

There is no statistically significant correlation at the 0.05 level of confidence between:

4. The control groups and the treatment groups on the Boehm Test of Basic Concepts and the level of maternal education for the treatment and the control classes.

5. Preschool attendance and the scores on the Boehm Test of Basic Concepts.

Organization of the Study

The study is organized into five chapters: the first chapter contains the necessary introductory statements, the introduction, the background of the study, the importance of the study, the theoretical framework of the study, the definition of terms, the problem statements and the hypotheses. The second chapter includes the review of related literature. The third chapter includes the design of the study, the type of study, the population, data collection, instruments and statistical procedures. The fourth chapter includes the presentation and analyses of the data. The fifth chapter includes the summary, conclusions, and recommendations for further study.

CHAPTER II

REVIEW OF THE LITERATURE

Reviewing literature related to the effect of instruction in concepts on the development of beginning reading skills has required research in the following areas: developmental stage theory of Piaget, reading achievement of different socioeconomic groups, concept development, preschool effectiveness, cognitive development and socialization practices of different socioeconomic groups. Studies chosen for this review of literature were selected because they combined two or more of the factors listed above. Studies that combine developmental stage theory (conservation) and socioeconomic group development were cited. Studies which combine socialization practices as defined by mother-child interaction and school achievement were reviewed. Studies that combine preschool attendance and school performance were included. Still other studies that reviewed the relationship of socioeconomic status and school achievement were selected. This research was summarized using the categories of cognitive development, concept development and conservation, socioeconomic status and reading, and socialization factors.

Cognitive Development

Two studies by Downing were important in reviewing

the literature on cognitive development. The first study was on cognitive clarity (1973). The study was concerned with two factors considered important in the development of readiness, cognitive clarity and socialization practices. They could also be described as intellectual and cultural factors. The theory of cognitive clarity suggests that early environment influences cognitive development. It also suggests that an environment of literacy is necessary for the development of cognitive clarity. This study compared children from two very different cultures, American Indian kindergarten children and Canadian children who were essentially white, English speaking children. Downing (1973) hypothesized that non-Indian children would demonstrate superior performance on tests of cognitive clarity. The study produced several conclusions. First, a background which provides experiences that allow for discovery of linguistic and technical concepts increases readiness for learning. Second, cognitive skill development is dependent upon the resources and instructional planning for concept development during early reading and writing activities. This has curriculum implications for kindergarten. It suggests that planned concept development is necessary. The second study by Downing explored language concepts and reading. In this study Downing (1973) conducted a series of experiments to explore children's definitions of reading and language. Downing confirmed Reid's study of young children by finding that children really have no

concept of what reading is and furthermore lack the tools with which to think about it. Downing (1973:4) states that "the normal state of the young child taking his first steps in learning to read is one of cognitive confusion about these basic concepts of language." Downing's experimental study followed kindergarten children for a period of one year. The treatment consisted of games and experiments which allowed the children to demonstrate understanding of the concepts. According to this study the key to effective development of concepts was two-fold: first, the child needed experiences which aroused curiosity and second, there needed to be reliable information for discovery of the concept. Downing postulated that language activities were the basis for the development of curiosity, while teaching provided information and interaction. This study correlated well with the developmental stage theory explained in the section on the theoretical framework. Developmental stage theory suggests that progress in stage development is dependent upon the integration of environment and experience with intellectual endowment.

Nevis (1976) also was interested in the relationship of thinking skills, cognitive development, and reading. Although this was not an experimental study but a review of existing research about thinking skills and reading, the study concluded that there was a logical synthesis between the two processes. Nevis also indicated that instruction which promotes logical thinking and problem solving is

important in the development of reading skills. He also stated (1976:10) that "structuring the classroom to promote logical thought by teaching for transfer of problem solving skills may be an overlooked attribute of prereading instruction."

In conclusion, ability to apply problem solving skills to different situations or to generalize across tasks can be explained in part by the theory of conservation which is defined as the ability to see that things remain the same even though there is a change in physical appearance. The development of distinctive changes in thought process is explained by developmental stage theory of which conservation is a part. Change in thought process can be facilitated by concept development.

Concept Development and Conservation

Defining concept development and formation is confusing and difficult. Good (1973) proposed that the best known explanations were those of Piaget, Bruner and Vygotsky. In reviewing the research of Bruner (1960) the importance of concept development on instruction can be seen. Burner advised that education should be organized by its structures. By structures he included both the psychological structures of the child and the curriculum structures of the school.

The research of Piaget (Ebel, 1960) on developmental stages has added a great deal to knowledge of concept

formation, especially in the area of number, quantity quality, length and size. Waller (1977) suggested that these concepts as they apply to conservation have been the most frequently investigated concepts. His research in the areas of developmental stage theory and reading concluded that conservers are better readers than non-conservers, early readers are just beginning to conserve and poor readers frequently cannot conserve.

A study of interest about concept teaching was that of Englemann and Gallagher (1966). The purpose of this study was to explore the concept of conservation in regard to the property of liquids. The teaching or training group received five days of instruction (20 minutes each day). The object of the training was to establish in the child conceptual independence and the ability to compensate. Conclusions of the study were as follows:

1. The properties of liquids that have ben assumed to stand for conservation can be taught through instruction.

2. It is essential that the teacher for such a program have a clear understanding of the tasks and skills involved in the concept that is being taught.

3. The teacher cannot provide the student with instruction in a cognitive structure of greater complexity than she herself can understand.

4. Teacher education has not provided instruction in either task analysis of the thinking of children or the breakdown of the component parts of concepts.

5. What children will learn depends on the ingenuity of teachers in organizing appropriate learning sequences.

Tomlinson (1977:2) in her research designed to investigate "children's understanding of the relationship between the spatial order of print and the temporal order of language and the terminology used to discuss these orders and relationships" attempted in her study to determine if these concepts could be taught prior to beginning a formal reading program. Conclusions of her study were:

1. There was a significant relationship between children's understanding of basic concepts prior to beginning a formal program and understanding of the concepts after four months of formal instruction.

2. Understanding of these basic concepts correlated significantly with predicted reading achievement.

3. There was a positive correlation between the concepts and an assessment of readiness.

4. There was a positive correlation between concept mastery and reading achievement.

5. Analysis of the temporal position of words indicated that the most easily identified position was the initial position. Most errors were made on the middle or last position.

A major implication in Tomlinson's study (1977) was that the factors of concept teaching must be taken into consideration in instruction. Tomlinson described these

instructional factors as: appropriateness of the activities to the concept, pupil participation, individual differences and selectivity as to whether or not the activity was appropriate for that child. Tomlinson (1977:94) made the suggestion that "further investigation is needed to determine the effect of instruction in readiness on basic reading concepts of children."

Another study on concept development was done in Arkansas (1972). This study attempted to investigate the difficulty children from a low socioeconomic area have in understanding the fundamental concepts assumed to be mastered by the first grade. This experimental study used material and methods common to the school district. In addition, instruction for the experimental group was based on an item analysis of a concept test and several field trips. Conclusions of the study were that there was a strong relationship between concept mastery and reading achievement.

Conservation as a predictor of reading achievement was investigated by Brekke and Williams (1975). Conclusions of this research were two-fold. First, conservation and intelligence are both good predictors of reading achievement and second, the relationship of conservation and reading are related to readiness and to intelligence.

Still another study by Cox (1976) investigated the effects of conservation on reading competency. Children were tested for their ability to conserve. The children were also grouped by their ability to read (above or below grade level), sex, age, socioeconomic group and intelligence, findings of this study in contrast to the last, reported

that the ability to conserve was unrelated to intelligence. In addition, children reading below grade level were significantly different on measures of conservation than children reading at grade level or above. This study, however, failed to clarify relationships between socioeconomic groups and low reading performance. This made generalization from the findings difficult.

Roberts (1976) also analyzed the research on reading readiness and conservation in a series of studies done since 1963. Her main conclusion was that there needed to be a match of instruction and stage development. Instruction presented before a child had developed the necessary competencies did not result in learning.

Socioeconomic Status and Reading

In 1969 Scott conducted a study on seriation, reading readiness, social class and race. His research (1969) was based on theory which suggested that developmental progress is dependent upon two factors. First, mastery of seriation and classification as explained by perception and language, and second, by the ability of the child to conserve. Conclusions of the study were this:

1. There was a significant correlation between seriation and the readiness test that was higher for white children.

2. Class differences could not be established due to the racial differences.

3. Although the seriation scores correlated highly with the achievement test, they correlated more significantly with the reading subtest than with the math test. "This indicates that language and perceptual capabilities are highly interdependent and interactive" (Scott, 1969:93). These findings support the suggestions of both Piaget and Bruner that language and cognition are closely associated. Scott (1969:93) also stated that "language enrichment unaccompanied by perceptual experiences, failed to meet the young child's full requirements for sound intellectual growth and development."

The relationship of conservation and socialization was investigated by Feigenbaum in 1968. It was a two-fold study. It attempted to teach the concept of discontinuous quantity (groups of similar quantity) and the ability to take on different social roles. His hypothesis was that training in conservation of discontinuous quantity would induce children to take on different social roles and conversely, this social role training would induce conservation of discontinuous quantity. This was an experimental study that utilized a six weeks instructional period of treatment. Instruction was given in conservation, grasp of correspondence, physical perspective and social roleplay. Conclusions were that although training did not improve the subjects ability in social roleplaying it did improve the ability to conserve discontinuous quantity.

A study by Young also combined the factor of socio-economic status and conservation. The purpose of this study was to determine whether conservation of number, weight, volume, area and mass could be taught effectively by a novice teacher to disadvantaged children. The treatment was composed of ten minute lessons predesigned for each teacher. The findings were:

1. The lessons were effective for advantaged children at all chronological and mental ages over three.

2. The lessons were effective for the disadvantaged child at an intelligence level of 60-167.

3. The lessons in both cases were more effective for the child with an MA of four or over.

4. The advantaged child with a CA of three of more profited from the lesson.

5. The disadvantaged child needed a CA of five to benefit from the lesson.

6. All of the children gained in conservation concepts.

Conclusions of the study were important in terms of effective instructional practice. Young (1971:6) concluded that "conservation does not suddenly occur at age 7, 8, 11, but is acquired gradually, bit by bit, from infancy through the years and reaches maturity as soon as sufficient evidence has been brought to the attention of the subject." His second conclusion was that "conservation is a learning process and not primarily a biological maturational process for

the MA levels of 2 1/2 through 9, the limits included in this study."

A study on the relationship of reading achievement in advantaged and disadvantaged schools was done by Rush (1973). The problem for the study was to determine if there were significant differences in first grade reading readiness and first grade reading achievement among children in regard to the type of kindergarten attended (advantaged or disadvantaged) and in relation to both the socioeconomic status of the child and the school. Nineteen advantaged schools and eighteen disadvantaged schools were included. Four questions were addressed in this study. First, was there a difference in reading achievement and reading readiness according to the type of kindergarten (public or private) attended? Second, was there a difference in readiness and achievement according to the socioeconomic level of the child? Third, was there a difference in the two scores according to the socioeconomic status of the school? Finally, was there significant interaction between the variables of reading readiness and achievement?

The conclusions were:

1. Children who had attended kindergarten achieved significantly better than children who had not.

2. Advantaged children achieved at a significantly higher level.

3. Advantaged schools produced better reading scores.

4. The least gain was demonstrated by disadvantaged children in disadvantaged schools.

5. Disadvantaged children in advantaged schools demonstrated favorable gains.

6. The largest gain was produced in the advantaged schools with advantaged children.

7. The advantaged child in the disadvantaged school did not lose if the advantaged child was in the majority.

A large study was that of Lazar (1978). This was a combined study done by a consortia to analyze the effect of 14 early intervention projects. The study was a longitudinal study undertaken to determine if the lack of short term effects determined by early analyses of early intervention programs held constant during the teenage years. The 14 projects that were analyzed had very little in common in regard to method, philosophy, technique, approach or number of subjects. The follow-up analyses found some important differences between subjects that had received early intervention and those subjects that had not. The measures used for comparison were school attitude, delinquincy rate and school achievement. Subjects receiving early intervention measured substantially higher on each of these three measures.

Another study of interest was conducted for Title I preschool programs by Ross-Sherif (1978). This study attempted to analyze the cognitive and perceptual performance of the Title I children. Two specific conclusions

were drawn. First, current preschool programs were not able to instruct children in a fashion to have the disadvantaged child perform at a level comparable to his middle class peers, and second, preschool programs have not demonstrated proficiency in developing higher level cognitive skills. The study recommended that an in-depth analysis of model programs be done to improve the ability of Title I programs to increase the performance of low socioeconomic children on cognitive skills.

Socialization Factors

Gordon (1970) reviewed the major characteristics of socially disadvantaged children. This article discussed the research of Deutch, which reviewed the difference in language development and concept formation between classes. Deutch (1965) proposed that a high level of language development precedes advanced concept formation and problem solving. Children from a low socioeconomic group demonstrated less ability in concept formation. According to Gordon disadvantaged children demonstrate less ability in perception, ego strength, motivation and attitude as measured by middle class norms.

Smilansky (1977) recommended that planning instruction for the disadvantaged child involves a redefinition of readiness. This definition of readiness must be based on an explanation of how children develop. More emphasis should be placed on instructional methods. This confirms the statements of Durkin (1964:4) that readiness should be considered

in the light of what materials and what method. Smilansky (1977:44) stated that "the aim and position of education must be to strengthen and develop in children the mental structures necessary for achievement."

Anastasiow (1977) in discussing the process of socialization stated that middle class children whose parents encouraged exploration, object manipulation and success did well in school. Children whose mothers' restricted exploration and who did not provide stimulation and verbal interaction did not achieve in school, and in addition, frequently there was some delay in language development.

Shipman (1977:55) reporting on the findings of a major Head Start study indicated that the most unusual finding in this study was the inability of the under-privileged child to "generalize across task." Children from the most disadvantaged background demonstrated very fragmented behavior. Each task seemed to be brand new. There was no transfer of knowledge. The longitudinal findings of the Shipman's (1977:56) study were that "there was a developmental lag in the organization and differentiation of cognitive-perceptual abilities, a lag in the speed of response, and in cognitive behavior." These findings confirmed the difference in the socialization and cognitve development between classes noted before.

Another study of interest in the analysis of socialization factors is that of Broman (1975). This study analyzed 169 variables from the pre and post natal periods of 50,000

women in 12 medical centers. The strongest predictor of mental retardation that was found was the level of maternal education. Other valuable predictors were also discussed: socioeconomic index of the family, size of the infant at birth, delayed development during the first year and brain abnormality.

Stendler has done several studies on the importance of timing in developmental learning interaction. Her work demonstrated the idea that independence must be fostered or trained. The child needs to become independent in ways necessary for his culture. According to Stendler certain critical periods in the socialization process can result either in dependency or independence. These periods occur when the child shifts his relationship to the primary socializing agent, usually his mother. This change has to do with interference in the way dependency needs are met. If these needs are not met overdependency results. Two periods are important. The first period occurs during the end of the first year when the child becomes aware of his dependence on his mother. This is the period described by Erikson (1950) as development of basic trust. According to Erikson if this trust is not developed the child may develop with a low ego strength and low motivation. The second period occurs between the second and third year when the culture demands more independence of the child. According to Stendler the child whose needs are not met during the second period may develop into a child that needs a very

structured situation in which to learn. The structure necessary to meet these needs is frequently lacking in a low socioeconomic home. This confirms Gordon's findings discussed earlier.

The final research cited in this study was that of Umansky (1980). In his article Umansky concluded that there were three factors important in early childhood education for the disadvantaged. He suggested that: (1) there must be closer community agency cooperation in both identification and delivery services for needy children, (2) professional daycare must be expanded, and (3) there must be earlier and more effective training for prospective parents.

Summary

During the last ten years kindergarten has become an integral part of the elementary school. The major task for kindergarten is the development of readiness for learning. This learning is in the areas of cognitive development, social development, physiological development and environmental development. The curriculum for effective development of these factors is fragmented. The most promising theories for curriculum development are those theories concerned with cognition.

Downing's research on cognitive clarity stressed the importance of concept development in a sequential way. Research by Almy, Piaget and Elkind indicated that childrens' thought processes are different from that of adults. Bruner

suggested that language is the tool used to order and integrate conservation. Research by Ashton, Elkind, Cox and Brekke developed ideas about the close relationship of conservation concepts and reading. Research by Young, Deustch, Shipman, Anastasiow, Gordon and Smilansky indicated that the ability to conserve differs in onset among classes. Research by Stendler, Gordon, and Smilansky indicated that early differences in socialization cause developmental differences which may be demonstrated by children in kindergarten. Instruction that takes into consideration the following factors of the developmental stage of the child, his environmental background, his early socialization and instruction in concept development may improve reading achievement. All of the above listed factors impact both readiness instruction and reading achievement. Instruction in concept development suggests a way of integrating the differences produced by these variables.

CHAPTER III

METHODS AND PROCEDURES

Description of the Sample

The subjects for this study were kindergarten children in six separate schools in East Baton Rouge Parish, Louisiana. One kindergarten class was selected in each school. The six schools were selected from a rank ordering of all elementary schools in the parish, ranked by the percentage of children receiving free lunch at each school during the 1979-80 school year. The list of schools was divided into three equal groups in order to establish a high, middle and low socioeconomic grouping. Two schools were selected by the parish from each group, one for a treatment school and one for a control school. Schools with as close a match of children receiving free lunch as possible were selected. The school selection process was based on a stratified random selection of the percentage of children receiving free lunch, however, this selection process also indicated that schools in the three categories fit the designation of surburban, transitional and inner-city schools.

Description of the Instrument

The two instruments chosen to measure changes in cognitive development in this study were the Metropolitan

Readiness Test, Level II, Form P Pre-Reading Composite (MRT), and the Boehm Test of Basic Concepts, Form B (Boehm). The MRT was administered by the parish in April. This test was chosen by the parish to determine if the kindergarten curriculum taught the readiness concepts tested by the MRT, Level I administered by the parish in September. The MRT, Level II was designed to measure the skills needed in beginning reading and mathematics. It yielded scores in four discrete areas: auditory, visual, language and quantitative. The subtests included in the auditory section measured beginning consonant sounds and sound-letter correspondence. This was accomplished by asking the child to discriminate among beginning consonant sounds by identifying letters that corresponded to specific sounds in words. The visual section consisted of two subtests, visual matching and finding patterns. These skills were measured by matching letters, numerals and letter like forms, as well as by locating particular letter or word group formations. The language section consisted of the subtests which measured school language and listening skills. Concepts included in language subtests included concepts such as over, on, and in. The final two subtests were quantitiative and were not included.

The statistical data provided by the test seemed appropriate for this study. The test maker stated that ethnic bias was screened out in the development program in the following way. There were two full scale item tryouts, one in 1972 and one in 1973. In the first tryout 10,320

pupils in 40 districts were measured. In 1973 an item analysis was done. Items suspected of ethnic bias were dropped on recommendations of minority group consultants. Items used were judged familiar to all kindergarten and first grade students. This test, standardized in 1974, has parallel forms matched in terms of content, item difficulty and item discrimination. The test was correlated with the MRT, Level I, which was given in September by the parish to all kindergarten children. Level I tests the more basic prereading skills while Level II focuses on the higher skills considered essential in beginning reading and mathematics. Level II appeared to be an accurate assessment of the kindergarten curriculum with which to compare treatment and control groups which received specific instruction in concept development.

The second instrument, the Boehm Test of Basic Concepts, form B, was chosen for this study due to the fact that it is a norm referenced test of the concepts that the review of literature indicated were necessary for effective concept development. The concepts tested are in the areas of space, quantity and time. In addition there were five concepts in the category listed as miscellaneous. These five concepts, skip, different, alike, matches, and other are frequently used in kindergarten instruction. This test was designed as a teaching and screening instrument for grades K-2, rather than as a predictive instrument.

In addition, tables were provided for middle and end of year norms for three socioeconomic groups. The test reliability was established by split-half reliability coefficients. The reliability coefficient for kindergarten was .84; the standard error of measurement was 3.0.

Description of Procedure

The design of the study was an experimental study, posttest control group design (Van Dalen, 1966). Testing was done at both the treatment schools and the control schools. The treatment consisted of twenty-three 30-minute lessons in concept development. The treatment was administered over a three-month period beginning in February, 1980, for the three treatment schools. Lessons were identical in each school. Students in both the treatment and control schools were posttested at the conclusion of the instruction in May with the Boehm Test. The MRT was given by the parish in April.

Information on preschool attendance and the level of maternal education was taken from the cumulative folder by either the researcher or the school secretary.

TREATMENT

Research indicates that children do not enter kindergarten at the same developmental age or stage even though they enter kindergarten at essentially the same chronological age (Smith, 1950). The socioeconomic background of children

differs as does the type of family socialization. Research studies suggested that mastery of basic concepts is necessary for school success. Since children differ in their mastery level of these basic concepts instruction was designed to enhance each child's knowledge and mastery of these concepts.

The treatment used in this study targeted the concepts of space, quantity and time. The vocabulary words used to express these concepts were taught in order to allow the student to express understanding of the concept. Each lesson included two or three vocabulary words describing the concept and instruction in use of the concept by the use of manipulatives such as blocks, links, circles and cups. Pictures and board diagrams were used to explain the vocabulary words. According to Klapper and Birch (1969) actual objects elicit more response from children than do pictures. Older children are more able to understand pictorial symbols

The second part of each lesson was composed of a story. The story illustrations were for new visual stimuli. Research by Wolf (1971) indicated that regardless of age children respond to new visual stimuli, particularly if the stimuli is not lost in a complex field. The combination of story and picture was used to build understanding of the concept. In addition the story was used to develop understanding of time sequence.

Evaluation of the concept was ongoing. First, there was daily assessment using the manipulatives, and second,

paper and pencil assessments were done.

Research findings by Stone (1978) indicated that the successful model for effective instruction was based on timely contacts between adult and child. This treatment created concrete concept experiences for the child. The instructor and teacher participated in the experiences and built a warm supportive atmosphere. The responses of the instructor and teacher were tailored to fit the kindergartner's cognitive abilities and interests. Teaching was direct, as in giving information and demonstrations. Amplification of the concepts was done by pretend play, entertainment, conversation and frequently a blend of several of these as recommended by Smart and Smart (1978).

LESSON PLAN DESCRIPTION

Each of the 23 lessons was designed to teach vocabulary associated with the concepts of space, quantity and time. The lesson began with a review, using manipulatives of the vocabulary from the prior lesson. Children were asked to demonstrate individually understanding of the prior concept using manipulatives and language.

The concepts were sequenced in the following manner. First, space and miscellaneous vocabulary concepts were introduced. According to Gesell (1960) these concepts should be developed by age five. The five miscellaneous words were instruction words such as skip, different, other, alike and match. The second major concept was quantity. According to

Singer and Revenson (1978) quantity concepts are facilitated by instruction. The final category of concepts was time concepts. Boehm suggested (1971) that these concepts are more difficult due to the fact that the vocabulary may overlap several concepts, making concept mastery more difficult. For example, the word "second" could be either space or time.

Each lesson was composed of a review of prior vocabulary and the introduction of no more than three new words. Two standard materials were a plastic cup with a top containing selected manipulatives such as links, blocks, or circles, and a short (ten minute) story. There was a review at the end of each major concept. The review was either paper and paste or paper and pencil.

The lesson plan for each session included the following parts: the major category, the vocabulary words to be taught, the primary function of the lesson (interaction of teacher and pupils, knowledge, or environmental stimuli), a materials list, title of story, technique to be used and the instructional objective which included the evaluation.

The story was included as a major part of each lesson for several reasons. Story illustrations were used both to visually demonstrate the vocabulary concepts and as a knowledge input. The story reinforced the language that pertained to the concept.

The stories were chosen for interesting story line, appropriate and colorful illustrations, and appropriate

topics. The responses made by the children indicated both their interest in the story and their comprehension of the story and the concepts.

A daily record was kept on each class. The daily evaluation was subjective due to the fact that each child could see the work of other children. The concept tests developed by the researcher were objective.

SAMPLE LESSON PLAN

Date: February 26, 1980

Category: Space

Function: Interaction and Environmental Stimuli

Objective:

1. The student will demonstrate understanding of the word center by placing the blue block in the center of the top with 100 percent accuracy.

2. The student will demonstrate understanding of the word side by placing all the blocks on the side of the top with 100 percent accuracy.

Materials: Cup with top, orange circle, orange block, blue block, and green block.

Vocabulary words: center, side

Story: Huge Hugo by Bill Peet

Procedure: Review prior concepts. Introduce new vocabulary words in the following manner. Draw a circle on the board. Mark a X on the circle. Explain that this the center of the circle. Demonstrate the cup. Place a finger in the center

of the cup. Place a finger on the center of the top.

Introduce side by drawing a circle on the board. Draw an X at the side of the circle. Hold up the cup. Place a finger at the side of the cup. Ask several children to form a circle in the center of the group. Ask another child to stand in the center of the circle. Ask another child to stand at the side of the group.

Pass out manipulatives and have the children do the following tasks.

1. Place your finger on the bump in the center of the top. Ask what we call this.
2. Place the orange circle on the center of the top.
3. Put your finger on the center of the orange block.

Introduce side.

1. Put the orange block on the side of the circle.
2. Put the blue block and the green block together.
3. Add the orange block.
4. Ask which block is in the center.
5. Ask which blocks are on the side.

Story:

Read aloud. Ask different children to respond to the questions:

1. Does the rabbit like being huge? Why?
2. Did the rabbit stay with his family?
3. Who chased the rabbit?

Statistical Treatment

Three statistical treatments will be used to analyze the data: the t test, the Pearson product-moment coefficient of correlation and the coefficient of contingency C. The t test is used to test the significance for small samples of the appropriate critical ratio. The Pearson product-moment coefficient of correlation is used to determine the ratio in which changes in one variable are accompanied by or are dependent upon changes in another variable. The third measure, the coefficient of contingency C, is used when the grouping is relatively fine, when the variables can be classified into categories and when normality in the variables can be assumed (Barrett, 1966).

The method used to compute the t-test is:

1. Compute the mean score of the two measures being compared.

2. Compute the standard error of the difference.

3. Compute the t by dividing the difference by the standard error of the difference.

4. Check the score by the table of t values.

The method used to compute the coefficient of correlation is as follows: $r = \frac{\sum x'y' - cycx}{N}$

$$\frac{}{\sigma x' \sigma y'}$$

The method used to compute the coefficient of contingency is as follows: $C = \sqrt{\frac{S - N}{S}}$

The first two hypotheses used the t test. Hypotheses three uses the Pearson product-moment coefficient of correlation and hypothesis four is analyzed with the coefficient of contingency C.

CHAPTER IV

STATISTICAL FINDINGS AND DISCUSSION

Introduction

Kindergarten childrens' knowledge of concepts was measured by the Boehm Test of Basic Concepts, Form B (Boehm). One hundred and seventeen children were measured by this test. Of this group 63 children received treatment composed of direct concept instruction and 54 children were used as a control group. This same group of children were tested by the parish on the Metropolitan Readiness Test, Level II, Form P (MRT). Concept knowledge as measured by the Boehm Test was examined and compared for the treatment and non-treatment groups. Scores on the concept test were correlated with scores on the MRT for both the treatment group and the control group. The relationships of maternal education and scores on the Boehm Test were examined as was the relationship of preschool attendance and scores on the Boehm Test.

The kindergarten classes in this study were selected from schools at three socioeconomic levels as determined by the percentage of children receiving free lunch at each school. Schools at the high socioeconomic level received less than 10 percent free lunch. Schools at the middle level received approximately 50 percent free lunch, while

schools designated as low received over 90 percent free lunch.

The discussion of the research findings is outlined as follows. Each hypothesis is stated in the original order of presentation. The hypothesis is followed by the statistical findings and a statistical discussion about the hypothesis. The chapter is concluded by a summary of the findings and a discussion of the findings relative to each other.

Hypothesis 1

There is no statistically significant difference ($p \geq .05$) between the means of the control groups and the means of the treatment groups at each of three socioeconomic levels on the Boehm Test of Basic Concepts.

Table 1

Difference Between Treatment and Control Groups at Three Socioeconomic Levels on the Boehm Test of Basic Concepts

Level	School	No. of Students	Mean	Difference	Standard Deviation
Low	treatment	25	37.34		4.29
	control	18	32.27	5.07	3.89
Middle	treatment	19	40.52		4.31
	control	18	32.55	7.97	7.00
High	treatment	19	44.42		3.79
	control	18	45.00	-.58	5.02

$p \geq .05$ level of confidence

Statistical Findings and Discussion

In analyzing this hypothesis, consideration was given to each of the socioeconomic levels. Using a t test procedure to analyze the data, direct concept instruction was found to be significantly effective in the low socioeconomic level class $/\underline{t}(43) = 4.04/$. Direct concept instruction was found to be significantly effective at the middle socioeconomic class as well $/\underline{t}(37) = 4.14/$. At the high socioeconomic level, direct concept instruction did

not produce higher results $/\bar{t}(37) = .40/$. Looking at the three areas this hypothesis was rejected for the lower and middle socioeconomic level classes and accepted for the high socioeconomic level class.

Hypothesis 2

There is no statistically significant difference ($p \geq .05$) between the means of the control group and the means of the treatment group at each of three socioeconomic levels on the Metropolitan Readiness Test, Level II, Pre-Reading Composite.

Table 2

Difference Between the Treatment and Control Groups at Three Socioeconomic Levels on the MRT

Level	School	No. of Students	Mean	Standard Deviation
Low	treatment	25	46.32	10.74
	control	18	48.22	6.42
Middle	treatment	19	48.00	16.17
	control	18	46.44	11.84
High	treatment	19	48.15	13.76
	control	18	61.77	10.07

$p \geq .05$ level of confidence

In analyzing this hypothesis consideration was given to each socioeconomic level. Using a t test procedure to analyze the data a statistically significant difference $/\bar{t}(37) = 3.45/$ was found with the high socioeconomic level classes. Differences at the low socioeconomic level classes $/\bar{t}(43) = .72/$ were not significant. Differences were also not significant at the middle level $/\bar{t}(37) = .34/$, therefore the hypothesis was accepted at the low and middle level classes and rejected for the high socioeconomic level classes.

Hypothesis 3

There is no statistically significant relationship ($p \geq .05$) between the score of the Boehm Test of Basic Concepts and the Metropolitan Readiness Test, Level II, Pre-Reading Composite among classes and between groups.

Table 3

Relationship Between the Scores of the Boehm and the MRT at each of Three Socioeconomic Levels

Level	School	No. of Students	Coefficient of Correlation
Low	treatment	25	.76
	control	18	.25
Middle	treatment	19	.60
	control	18	.75
High	treatment	19	.75
	control	18	.43

$p \geq .05$ level of confidence

The relationship between the Boehm Test and the MRT was analyzed using a Pearson product moment coefficient of correlation. Data from this analysis was indicative of a strong relationship between reading and concept mastery in the experimental classes. The results were statistically significant in all three experimental classes as well as at the middle level control class. At the low experimental class $r = .76$ which exceeds the table value for $p \geq .01$. At the middle experimental class $r = .60$ which exceeded table value. The high level experimental class correlation

$r = .75$ also exceeded table value. At the middle level control school $r = .75$. All of these classes exceeded table value at the $p \geq .01$. At the high level and low level control school the hypothesis was accepted.

Hypothesis 4

There is no statistically significant relationship ($p \geq .05$) between scores on the Boehm Test of Basic Concepts and the level of maternal education for the treatment and the control classes.

Table 4

The Relationship Between Scores on the Boehm Test of Basic Concepts and the Level of Maternal Education

Treatment

Boehm Test

Education	H	M	L
H	6	5	1
M	10	22	3
L	0	10	6

N=63

Control

Boehm Test

Education	H	M	L
H	7	3	8
M	8	8	14
L	0	2	4

N=54

$p \geq .05$ level of confidence

This hypothesis was analyzed using the Coefficient of Contingency C. The C was converted to Chi Square to allow use of the Chi Square tables ($p \geq .05$). Boehm Test scores were placed in the low, middle or high group based on an even distribution of scores within the frequency tables. Score 18-34 were considered low, scores 35-43 were considered middle range, and scores 44-50 were considered high. Maternal education was classified as below high school, high school graduation and post high school. The hypothesis was accepted ($p \geq .05$) for both the treatment and the control classes. At the control school $\chi^2=3.67$, while at the treatment school $\chi^2=4.02$.

Hypothesis 5

There is no statistically significant correlation ($p \geq .05$) between preschool attendance and scores on the Boehm Test of Basic Concepts.

Table 5

The Relationship Between Preschool Attendance and Scores on the Boehm Test of Basic Concepts

Boehm	Preschool: Yes	Preschool: No
H	18	5
M	43	14
L	23	14

This hypothesis was accepted. The hypothesis was analyzed using the Coefficient of Contingency C. The C was converted to $\chi^2 = .42$.

Discussion of the Hypotheses

Based on some of the research for this study (Tomlinson, 1977) and (Engleman and Gallagher, 1966) hypothesis 1 confirmed earlier findings that a program of systematic instruction in concepts improved concept mastery. Other research such as that by Gordon (1965) and Smilansky (1977) indicated that children from low socioeconomic groups do not do as well on concept measures. This, too was confirmed by the findings of this hypothesis. In addition the excellent performance on the Boehm Test by the high socioeconomic control class was a further indication that these children may not need concept instruction of this type. Their experiences prior to school entry enabled them to master these concepts without direct instruction.

Analysis of the findings of the second hypothesis which compared experimental and control group reading achievement scores indicated that this hypothesis must be accepted for the low and middle groups. Several things must, however, be taken into consideration. At the low socioeconomic control school the results were unexpected. This class had an unusually high mean MRT score. Furthermore comments by the classroom teacher at the experimental low socioeconomic class were that this class had performed better on the MRT than had her previous classes. At the high level control school the classroom teacher indicated that her class was one of the most superior that she had had, once again reconfirming the suggestion that children

at this socioeconomic level receive experiences prior to school entry that prepare them for more substantial achievement. The Boehm Test was not accurate for this class. A higher level was needed.

Findings of the third hypothesis indicated a strong relationship between reading achievement and direct concept instruction. The relationship between reading achievement and concept mastery was much more significant for the treatment schools; whereas, the relationship at the low socioeconomic treatment school was not at all significant.

Findings of the fourth hypothesis which attempted to establish a relationship between the level of maternal education and concept mastery were mixed. For example, no mother classified as having low educational status had a child that scored in the high range in either the treatment or the control school. Differences were noted at the middle score range on the Boehm Test. In the experimental class twice the number of children scored in the middle range as did in the control school. This indicated again that this type of concept instruction was more suitable for children at the low and middle socioeconomic level.

Hypothesis five reconfirmed earlier research data (Ross-Sherif, 1977) which indicated that preschool attendance by and of itself does not produce short term academic results. This may be due to the varied nature of preschools. In this study, of the 117 children only 33 had not attended a preschool of some type.

Comparison of Student Data and Standardized Sample

A further method of data comparison is that of comparing the study data with that of the standardized sample data for both the Boehm and the MRT. In this comparison, the means and the standard deviation are used.

Comparison of the study data with that of the standardized sample in the Boehm Test manual indicated that there is a significant relationship between concept instruction and scores on the concept test. The following table lists the data found in the technical manual for socioeconomic groups together with the study data for the experimental socioeconomic groups and the control groups. (See Table 6)

At the low socioeconomic level the treatment group surpased the standardized sample as well as the control group indicating that for this group concept instruction was very effective. The Boehm Test manual, however, does not indicate how socioeconomic groups were selected for their sample population. This makes comparison of the middle group somewhat difficult. In this study both the low and the high socioeconomic schools were selected from schools having either more than 90 percent of the school population receiving free lunch or less than 10 percent receiving free lunch. The middle range was composed of schools receiving 45-60 percent free lunch. Therefore, comparisons of the study data with the standardized sample appear to be more justified at the high and low levels.

Table 6

Comparison of Standardized Sample with Control and Treatment Study Data

	Standardized Sample			Treatment			Control		
	Low	Middle	High	Low	Middle	High	Low	Middle	High
mean	33.8	42.00	43.7	39.34	40.52	44.42	32.27	32.55	45.00
S.D.	8.9	5.4	4.9	4.29	4.31	3.79	3.89	7.00	5.02

Unlike the Boehm, the MRT does not divide the standardized sample into socioeconomic levels, thus, in comparing this information a total standardized sample is used. (See Table 7)

An examination of Table 7 indicates that the treatment schools cluster either slightly above or below the mean for the MRT standardized sample as do two of the control schools. At the high socioeconomic control school the mean was far above the standardized sample mean, once again indicating that this was an exceptional class. Another finding was that the mean at the low control school surpassed both the standardized sample and the high socioeconomic treatment school. However, at this school four children were unavailable for testing and their scores were not included in the MRT mean.

In comparing the standardized sample data of the Boehm and MRT with the study sample, the following should be noted:

1. Treatment was effective in raising the performance level on the Boehm Test at every socioeconomic level.

2. Means of both treatment and control groups clustered around the standardized sample mean on the MRT.

Table 7

Comparison of Standardized Sample Data and Treatment and Control Study Data on the Metropolitan Readiness Test, Level II Pre-Reading Composite

	Standardized Sample	Treatment			Control		
		Low	Middle	High	Low	Middle	High
mean	47.14	46.32	48.00	48.15	48.22	46.44	61.77
S.D.	14.4	10.74	16.17	13.76	6.42	11.84	10.07

CHAPTER V

CONCLUSIONS AND RECOMMENDATIONS

Introduction

The original problem for this study was to evaluate reading achievement in terms of direct concept instruction, socioeconomic status, the level of maternal education and preschool attendance. Two of these factors, socioeconomic status and direct concept instruction, were important in reading achievement. The level of maternal education and preschool attendance did not appear to affect reading achievement in any significant fashion.

This study used two standardized tests as measuring instruments. The test administered by the researcher was the Boehm Test of Basic Concepts, Form B which was used to measure the effects of direct concept instruction. The second measure, the Metropolitan Readiness Test, Level II, Form P, Pre-Reading Composite was administered by the parish to measure the effects of the curriculum on reading achievement in kindergarten. Both were standardized measures. In addition, the Boehm Test allowed for closer monitoring of socioeconomic status since it was standardized at three socioeconomic levels.

The initial theories of this study were that each of the controlling factors played a part in reading achieve-

ment at kindergarten. It was expected that the most important factor was that of socioeconomic status. This was demonstrated in the study. On both measures, students at the high socioeconomic level performed better regardless of treatment. The second theory was that children receiving direct concept instruction would score better on reading achievement measures than would children who did not receive treatment. This theory was not substantiated. The theory that children receiving direct concept instruction would score better on a test of concepts was substantiated by the data as was the theory that there is a strong relationship between reading achievement measures and concept instruction. The last two controlling factors, the level of maternal education and preschool attendance had no significant effect. Research had indicated that preschool attendance had no short term effect on school achievement. The research had indicated that the socializing effects of the mother was important in reading achievement. The level of education did not appear to measure the effects.

Conclusions

There were five conclusions in this study.

1. Direct concept instruction in the concepts of space, quantity, and time is effective in raising the scores of the children on the Boehm Test. These concepts can be effectively taught.

2. There is a strong relationship between direct concept instruction and reading achievement. Classes that received such instruction demonstrated a higher correlation with reading achievement than those that did not.

3. Concept instruction by the use of manipulatives reinforced by stories is effective. This was demonstrated by the improved scores on the concept test.

4. The relationship of the maternal level of education has some bearing on the concept achievement of the child. For example, no mother categorized as having low educational status had a child that even with treatment scored in the high range on the concept test.

5. Preschool attendance has no bearing on concept knowledge. This reconfirmed earlier studies which found that no short term academic effects were apparent from preschool attendance.

In conclusion, this study attempted to relate reading achievement with four other disparate factors, socioeconomic status, direct concept instruction, the level of maternal education and preschool education. Research had indicated that reading achievement had been compared with socioeconomic status, educational status and conceptual development. This study attempted to investigate whether direct concept instruction would improve the reading achievement of children. The data results indicated that there was a strong relationship between the mastery of the concepts of space, quantity and time and reading achievement. The data also

indicated that direct concept instruction was effective in producing concept mastery. The factors of maternal education and preschool attendance did not appear to have a direct effect on reading achievement.

From these conclusions many interpretations can be suggested. Research has indicated a link between reading achievement and concept mastery, between socioeconomic status and reading achievement, and between maternal socialization practices and reading achievement. This study attempted to investigate whether direct concept instruction could improve the relationships of these factors and result in improved reading achievement. Instruction chosen for this purpose was instruction in the concepts of space, quantity and time which the theoretical research of Piaget and others had deemed important. The theoretical base for the design of the study was the theory of stage development (Kohlberg and Mayer, 1977).

The major interpretation from the conclusions of this study is that there is a strong causal link between concept development and reading achievement in kindergarten which can be facilitated by some type of concept instruction. Instruction in space, quantity and time concepts appeared to be more important at the low and middle socioeconomic levels. Children at the high socioeconomic level appeared to begin kindergarten with a basic understanding of these particular concepts. Concept instruction for these children should be given on another stage of development, perhaps that of causality, classification and seriation.

A second implication of the study is that in some way the socialization practices of the mother and her education are linked. The fact that no mother classified as low educational status had a child, even receiving treatment that scored in the high concept range is of interest and concern. The data implied that children of mothers educationally classified as low could improve their concept score by direct concept instruction.

A third suggestion from the study is that concept instruction by the use of manipulatives and stories could easily be included in the kindergarten curriculum. The amount of instruction (12 hours) was very limited to have produced such marked results. Although every child in every class does not need this instruction it would appear that many do. It would be relatively easy to include direct concept instruction for those children who are in need of this instruction.

Another suggestion is that instruction which utilizes manipulatives is effective in teaching the concepts of space, quantity and time for several reasons. Research indicates that the manipulation of objects is an important step in learning and in fact precedes the ability to learn from pictures. The theories of stage development indicate that children need concrete experiences for learning. Yet another use of manipulatives was provision of both immediate modelling for the student and direct observation by the teacher as to the progress of the student. It was particularly effective at the low and middle socioeconomic

classes.

In using these conclusions, several factors need to be considered. First, this study was done on an urban population and was of limited number. The socioeconomic status of the schools involved was determined by the number of children at those schools who received free lunch. Control schools could not be matched exactly. Instruction was limited and no provision was made for indirect concept teaching by either classroom control or treatment teachers.

Recommendations for Further Study

Numerous research questions have arisen from this study, resulting in the following recommendations.

1. Additional investigations of the nature of concept instruction is needed. This study was limited to the concepts of space, quantity, and time which research had indicated were important. Research also indicated that there are levels of conceptual development in the theories of stage development. A further study of their importance on school achievement is needed. Concepts that would logically appear to follow space, quantity and time are the concepts of causality, seriation and classification. Instruction in these concepts would appear to be effective for those children who entered school with mastery of the concepts of space, quantity and time.

2. A second recommendation is that development of instructional packages using manipulatives and stories be designed for inclusion in the kindergarten curriculum.

Most kindergarten classes lack small manipulatives in sufficient quantities for class use. These manipulatives have several benefits unanticipated by the study. The manipulatives allowed for small motor practice of the type that is needed for writing. In addition it gave additional practice in color recognition.

3. Another recommendation is that a further study be done including a better racial mix. The study included 117 children of which 36 were white. Although research indicates that socioeconomic status is a more important predictor of school achievement than race the fact that there were no white children in either the low or middle classes limited the study.

4. The final recommendation is that direct concept instruction in space, quantity and time be included in the kindergarten curriculum.

Summary

The problem for this research was to evaluate reading achievement at kindergarten in terms of direct concept instruction, socioeconomic status, the level of maternal education and preschool attendance. Although there have been many studies that have investigated the relationship of reading and concept development, reading and socioeconomic status and reading and preschool, there seemed to be a need for a study that integrated these factors together with a treatment method designed to improve reading scores. The theoretical base for this study was the stage

development theory of Jean Piaget. These cognitive developmental theories were further investigated by Kohlberg and Mayer. They suggest (1978:131) that "cognitive development is a dialogue between the child's structures and the structures of the environment." This theory suggests that environment, interaction, culture and experiences all have a role in producing cognition. Children pass through distinct and definite stages of cognition. Care must be given to provide the appropriate stimulation at the appropriate time. Furthermore, all children do not pass through the developmental stages at exactly the same time. The culture of the child causes this to differ to some degree. The school curriculum needs to consider all these factors, cognitive, physiological, social and environmental in planning the instructional program. In order to consider these factors in this research, five hypotheses were studied:

1. There is no significant difference between the means of the treatment group and the means of the control group on the Boehm Test.

2. There is no significant difference between the means of the treatment group and the means of the control group on the MRT.

3. There is no significant relationship between the scores of the Boehm Test and the score of the MRT among classes or between groups.

4. There is no significant relationship between the level of maternal education and scores on the Boehm

test for the treatment or the control group.

5. There is no significant relationship between scores on the Boehm Test and preschool attendance.

The study population was composed of six kindergarten classes in six schools. These schools were classified as having low, middle or high level socioeconomic status on the basis of the number of children receiving free lunch at each school. Schools classified as low had over 90 percent of the students receiving free lunch. Schools classified as middle had between 45 and 60 percent of their population receiving free lunch. Schools classified as high had less than 10 percent of their population receiving free lunch. Two schools at each level were paired for a treatment and a control school. A kindergarten class was chosen at each school. The total study population was 117 of which 63 received treatment and 54 did not.

In addition, 36 of the children in the study were white and 81 black. School records were also used in the study to determine both preschool attendance of the child and the level of maternal education. The level of education was classified as below high school, high school graduation and post high school.

Instruments used in the study were the Boehm Test of Basic Concepts, Form B. This is a standardized measure of the concepts of space, quantity and time which yields information at three socioeconomic levels. The second instrument used was the Metropolitan Readiness Test, Level II,

Form P, Pre-Reading Composite administered by the parish in April. The Boehm Test was administered by the researcher at the conclusion of the treatment in May to all six schools.

The treatment was composed of two parts. The first part consisted of a brief introduction of the vocabulary words of the concept, modelling by the instructor of the concept behavior and then guided practice for each child of the desired behaviors using individually prepared materials This part was concluded by completion of the evaluation which had been built into each objective. Materials consisted of a plastic cup with cover, blocks, links and colored circles.

The second part of the lesson was a story read by the researcher. Stories were chosen for strong story interest, appropriateness of the illustrations for the concept being taught, book size and format.

Each lesson lasted one-half hour and was done twice a week for twelve weeks during the spring semester. There were 23 lessons and a final test, The Boehm Test. In addition three teacher made tests were administered.

The results of this study were:

Hypothesis 1 was analyzed by socioeconomic level. This hypothesis was rejected at the low and middle level but accepted at high level. Indications were that direct concept instruction of this type was needed much more at the low and middle socioeconomic levels.

Hypothesis 2 was also analyzed by socioeconomic level. At the low and middle levels this hypothesis was accepted but rejected at the high level. Even though the experimental classes seemed to have improved reading achievement scores the means of the control schools at the low and high control classes surpassed the means of the treatment class.

Hypothesis 3 was significant statistically at $p \geq .01$ for all level treatment schools. It was also significant for the middle level control school. There seemed to be a strong relationship between reading achievement and concept instruction.

Hypothesis 4 was accepted. Further analysis of the data however indicated that no mother classified as having low educational status had a child that scored in the high concept range. Furthermore, many more children whose mothers were categorized as of low educational level had children that scored in the middle range in the treatment schools than did in the control schools.

Hypothesis 5 was accepted. This reconfirmed earlier research that indicated short term academic results were not usually achieved by attendance at preschool, probably due to the many and varied types of preschool care.

Conclusions of the study were:

1. There is a strong relationship between concept instruction and reading achievement scores. Classes that received such instruction demonstrated a correlation that was significant.

2. Children that receive direct concept instruction in the concepts of space, quantity and time demonstrate superior performance on the Boehm Test.

3. Concept instruction that used manipulatives reinforced by stories read by the teacher was an effective procedure for concept instruction of young children.

4. Mothers having an educational status classified as low did not seem to have children that scored well on concept measures. Instruction in concepts appeared to help these children with concept mastery.

5. Preschool attendance had little short term effect on concept development. However no attempt was made to determine the type or quality of the preschool attended by the child.

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APPENDICES

Date: February 11, 1980 (1)

Category: Space, Miscellaneous

Function: Interaction

Objective:

1. Student will demonstrate understanding of the word top by placing a green block on top of a white block with 100 percent accuracy.

2. Student will demonstrate understanding of the word different by placing the block that is different in the cup with 100 percent accuracy.

Vocabulary Words: top, different

Materials: two yellow links, one blue link

Story: Really Spring by Graham Zion

Procedure: Have children form lesson circle. Write the words on the board and have the children repeat the words. Draw a circle on the board. Put an X at the top of the circle. Repeat with other geometric figures explaining each time that the X is at the top. Draw several circles and then a square. Explain that the square is a different figure. Ask three children to stand up. Ask which person is different. Show picture of Humpty Dumpty. Explain where he is sitting. Show picture after the fall. Explain what is different. Pass out materials. Have children complete the following tasks:

1. Place the link that is different in the cup.
2. Place the lid on top of the cup.

3. Place the links on top of the lid.

4. Repeat as necessary.

Read the story using pictures to demonstrate top and different. Ask the following questions:

1. What season is the story about?

2. What happened when the story started?

3. What did the rain make happen?

Date: February 12, 1980 (2)

Category: Space, Miscellaneous

Function: Interaction

Objectives:

1. Student will demonstrate understanding of the word behind by placing two blocks behind the cup with 100 percent accuracy.

2. Student will demonstrate understanding of the word matches by placing two objects that match in the cup with 100 percent accuracy.

Vocabulary Words: behind, match

Materials: Cup with lid, two green blocks, one white block, two green links.

Story: The Biggest Bear by Lyn Ward

Procedure:

Have children form circle. Review previous words. Write behind and match on board. Draw two circles. Explain they match. Draw squares behind circle. Repeat. Ask a girl to stand behind a boy. Have two girls stand up. Pass out materials. Have children do the following:

1. Take out two things that match and place them on the lid.
2. Take out two more things that match and place them on the top. (classification by color and by object--green, blocks, links)
3. Take the thing that is different (white block) and place it in the cup.

4. Place two blocks that match behind the cup.
5. Place two links that match in the cup.
6. Put the top on the cup.

Read the story. Ask the following questions:

1. What did Johnny do first?
2. Did Johnny shoot the bear?
3. At the end of the story what happened to the bear?

Date: February 20, 1980 (3)

Category: Space, Miscellaneous

Function: Interaction

Objectives:

1. Student will demonstrate understanding of the word inside by placing two green circles inside the cup with 100 percent accuracy.

2. Student will demonstrate understanding of the word alike by placing two links that are alike inside the cup.

Vocabulary Words: inside, alike

Materials: Cup with top, two green links, one blue link, two green circles.

Story: A Wise Monkey Tale by Betsy and Giulio Maestro

Procedure:

Children form circle. Ask children to tell the words that they have learned. Write words on board. Introduce two new words, inside, alike. Ask several children to make a sentence with these words. Pass out materials. Use the following directions:

1. Take off the top of the cup.
2. Place the top behind the cup.
3. Put the two links that match on the top of of the cup.
4. Put the link that is different on the top.
5. Put your hand inside the cup.

6. Put the link that is different inside the cup.
7. Put two things that match by color inside the cup.
8. Put two things that are alike by shape inside the cup.
9. Take two links that are alike and hold them up.
10. Add the link that is different.
11. Place the two green circles inside the cup.
12. Place the links that are alike inside the cup.

Read the story. Ask children to hold up their hand each time they hear the word inside. Comprehension questions:

1. Who was in the hole?
2. Which was the wisest animal?
3. Which was the first animal in the hole?

Date: February 21, 1980 (4)

Category: Space, Miscellaneous

Function: Interaction, language development

Objectives:

1. Student will demonstrate understanding of the word around by placing objects around the cup with 100 percent accuracy.

2. Student will demonstrate understanding of the word other by placing the other objects (circles) inside the cup with 100 percent accuracy.

Vocabulary Words: around, other

Materials: Cup, lid, two green links, two blue links, one yellow link, two each green, blue and yellow circles, a hula hoop.

Story: Eli by Bill Peet

Procedure:

Children form circle. Write words on board and pronounce. Ask children to remember previous words. Write these words on the board. Introduce new words by drawing a circle around an X. Draw two circles, draw a square. Place a X on the other figure. Ask a child to place the hula hoop around herself. Repeat as necessary. Ask two children to stand up. Place the hoop around one child. Ask the other child to sit down. Pass out materials. Have children do the following tasks:

1. Place two objects with the same color on the lid.
2. Place the circles around the cup.
3. Place the other objects inside the cup.
4. Review all previous words with body movements such as place the cup behind your head.

Explain shake game rules. Children may shake the cup on the command of three only. The lid must remain on the cup. If you shake ahead of time you are out of the game. You must stop shaking at the instruction STOP. Read the story and ask these questions:

1. What bird was the lion's friend?
2. When was the lion unfriendly?
3. Is it easy to be a friend?

Date: February 24, 1980 (5)

Category: Space, Miscellaneous

Function: Knowledge

Objectives:

1. Student will be able to demonstrate understanding of the word between by placing a white block between two green blocks, with 100 percent accuracy.

2. The student will be able to demonstrate understanding of the word skip by placing two green blocks on the top of the cup lid. Student will skip the green blocks and place the white block at the end with 100 percent accuracy.

Vocabulary: between, skip

Materials: Cup and lid, two green blocks and one white block.

Procedure: Introduce words between and skip by writing words on the board. Draw two circles on the board. Place an X between the circles. Explain that the X is between the circle. Repeat with squares. Ask a child to come to the board and place an X between two circles. Explain skip by drawing a row of circles with a space in between each circle. Take the chalk and skip over each circle while saying, " the chalk skips over this circle and this circle and this circle." Demonstrate by using the blocks. Skip the green block over the white block. Pass out the materials. Give the following instructions:

1. Have all children stand up. Have them place on hand between two feet. Skip over the foot and place hand on outside of foot. Repeat if needed.

2. Place blocks in front of cup.

3. Place lid beside cup.

4. Place white block between green block.

5. Place green block between cup and lid.

6. Place blocks beside each other. Pick up white blocks and skip over each green block.

Children move to tables and complete test (see appendices).

Date: February 26, 1980 (6) See sample in Chapter 3

Date: March 3, 1980 (7)

Category: Space

Function: Interaction and environmental stimuli

Objectives:

1. The student will demonstrate understanding of the word next-to by placing the green block next-to the cup with 100 percent accuracy.

2. The student will demonstrate understanding of the word above by placing the cup above the blocks with 100 percent accuracy.

Vocabulary: next-to, above

Materials: Cup with lid, two green links, one green block.

Story: The Pinkish, Purplish, Blueish Egg by Bill Peet

Procedure: Write new words on the board. Draw a square on the board. Place an X next-to the square. Repeat with other figures. Draw an X. Draw a circle above the X. Repeat. Ask a girl to stand. Ask a boy to stand next-to her. Ask all children to place their hands above their heads. Pass out materials. Have children do the following tasks:

1. Hold the block above the cup.
2. Place the green link next-to the cup.
3. Hold the block above the link.
4. Hold the links above the block.

Review prior words by using body movements being careful to include words that had been difficult in several movements. Play the shake game. Read the story and ask these questions:

1. Who was the mother?
2. What kind of a baby did she have?
3. Was the griffin a good friend?

Date: March 4, 1980 (8)

Category: Space

Function: Interaction

Objective 1.

Student will demonstrate understanding of the word row by placing six circles in a row with 100 percent accuracy.

Objective 2.

Student will demonstrate understanding of the words in order by placing six circles in order after modelling by the instructor with 100 percent accuracy.

Vocabulary Words: row, in order, next-to

Materials: Cup, top, six circles--red, orange, yellow, green, blue, and pink.

Story: Madeline and the Gypsies by Ludwig Bemelman

Procedure:

Introduce thw word row. Draw three circles in a row on the board. Explain that these circles are in a row. Illustrate the word row by a picture of animals in a row.

Introduce the words in order by drawing three circles in order from small to large on the board. Demonstrate with pictures showing squares that were arranged in order from small to large. Demonstrate with circles (manipulatives).

Introduce the words next-to by illustrating on the board with circles and squares. Say the circle is next-to the square.

Choose several children to make a row in the center of the instructional circle. Choose several children to stand in order of height in the center of the circle. Choose a child to stand next to the teacher.

Pass out manipulatives. Have children demonstrate the following tasks:

1. Place six circles in a row.
2. Place circles in the following order: red, yellow, blue
3. Place the red circle next to the cup.
4. Review prior words by playing shake game.

Read story and ask these questions:

1. What were the girls doing at the beginning of the story?
2. Where did Madeline go?
3. How were the children rescued?

Date: March 10, 1980 (9)

Category: Space

Function: Knowledge and environmental stimuli

Objective:

1. The student will demonstrate understanding of the word corner by arranging the six circles to form a corner with 100 percent accuracy.

2. The student will demonstrate understanding of the word near by placing the blue circle near the cup with 100 percent accuracy.

3. The student will demonstrate understanding of the word far by placing the red block far from the cup with 100 percent accuracy.

Vocabulary: corner, near, far

Materials: Cup with lid, six circles--red, orange, yellow, green, light blue and dark blue.

Story: Fish is Fish by Leo Lionni

Procedure:

Draw a box on the board. Place a X in the corner of the box. Explaing corner. Have a child place an X in another corner. Draw three boxes. Have children draw X's in each corner. Place an X next to each box. Draw an X next to the box. Explain that the X is near the box. Draw an X a distance from the box. Explain that this X is far from the box. Draw a box and mark the corners. Erase the board. Ask several children to come to the board and draw

a box, place a X in the corner of the box, an X near the box and an X far from the box.

Model making a corner with the circles. Have the children make a corner. Have the children place various circles near the cup and far from the cup. Review previous words with the shake game. Various direction combinations such as hold the cup near your knee, above your ear, far from your leg should be used before the magic word three. Read the story. Use pictures to demonstrate corner, near and far. Ask these questions:

1. What happened first?
2. What happened next?
3. What happened last?

Date: March 11, 1980 (10)

Category: Space

Function: Knowledge

Objective:

1. Student will demonstrate understanding of the word left by placing the green block on the left side of the paper with 100 percent accuracy.

2. Student will demonstrate understanding of the words away from by placing the green blcok away from the cup with 100 percent accuracy.

Vocabulary: left, away from

Materials: Cup with lid, green and white blocks, sheet of blank paper with a line down the center.

Story: A Letter Goes to Sea by Lore Leher

Procedure: Draw a sheet of paper on the board. Place X's on the left side of the paper. Explain that writing always starts on the left side of the paper. Explain that this is a rule to help remember left. Stories also start on the left. Draw an X far away from the paper. Explain that this X is far away from the paper. Use other examples in the room that are far away from the circle. Have children hold up their left hand. Using the empty cup have children play and sing the Hokey Pokey in this way. Put your left hand in the cup, put your left hand out, put your left hand in and shake it all about, then do the hokey pokey (using hand only) and you turn your hand around, that's what it's all about.

Repeat several times. Have children place left hand on left side of paper. Have children put the green and white blocks together. Have them place the blocks far away from the paper. Have the children place the blocks away from the cup. Read the story aloud. Use pictures and writing to explain left and away from. Ask the following questions:

1. How did the children make friends?
2. What happened to the letter at the end?
3. What happened at the beginning of the story?

Date: March 17, 1980 (11)

Category: Space

Function: Knowledge

Objectives:

1. The student will demonstrate understanding of the word right by placing the red block on the right side of the paper with 100 percent accuracy.

2. The student will demonstrate understanding of the word forward by standing and bending forward with 100 percent accuracy.

3. The student will demonstrate understanding of the word backward by standing and bending backward with 100 percent accuracy.

Vocabulary: right, forward, backward

Materials: Sheet of white paper with a line drawn down the center, cup with lid, red block, white block.

Story: Lentil by Robert McClosky

Procedure:

Explain the word right. It is a direction word. It is the hand that we use to salute the flag. Demonstrate the salute. Have children stand up and pretend to salute the flag. Ask which hand is used to salute the flag. Have children hold up their right hand. Repeat as necessary. Introduce forward by bending forward at the waist and saying "I am bending forward." Ask children to bend forward and touch the floor with their hair. Draw a stick figure on the

board that is bending forward. Ask a child to stand in the middle of the circle and bend forward. Introduce backward using the same format. Ask a boy to stand in the circle and bend forward. Ask a girl to bend backward. Pass out materials. Children should complete the following tasks:

1. Sing the Hokey Pokey song in the following manner. Put your right hand in (the cup) put your right hand out, put your right hand in and shake it all about. You do the Hokey Pokey and you turn your hand around, that's what it's all about. Repeat several times.

2. Place sheet of paper on the floor. Have children place their right hand on the right side of the paper. Check each child.

3. Have child place blocks on the right side of the paper.

4. Ask the children to place the red block on the right side.

5. Have children stand and place their hands above their head. Ask them to move their hands forward.

6. Have children hold the cup with both hands out in front of themselves. Ask them to move the cup backwards.

Read the story. Ask children to raise their hand when they hear the word forward or backward.

Story Questions:

1. Where was Lentil going?

2. What did he want to do?

3. What happened last?

Date: March 18, 1980 (12)

Category: Space

Function: Knowledge

Objectives:

1. Student will complete test on space concepts with 100 percent accuracy.

Materials: Ditto test (See Appendices)

Story: Chaga by Willard Nicolas

Procedure: Place children at tables. Pass out test and pencils. Read instructions. After children have finished read the story. Use these questions.

1. Who was Chaga?
2. What happened to Chaga?
3. How did the story end?

Date: March 24, 1980 (13)

Category: Quantity

Function: Language and interaction

Objectives:

1. The student will demonstrate understanding of the word first by making a row of circles with the yellow circle first with 100 percent accuracy.

2. The student will demonstrate understanding of the word second by placing circles in a row with the blue circle second with 100 percent accuracy.

3. The student will demonstrate understanding of the word third by making a row of circles with the green circle third with 100 percent accuracy.

Vocabulary: first, second, third

Materials: Cup with lid and five circles of red, orange, yellow, green, and blue.

Story: Circus Ruckus by Will and Nicolas

Procedure: Explain first by drawing several circles on the board. Point to the first circle and say first. Repeat with squares. Follow the same procedure in introducing second and third. Ask a child to stand. Ask another child to stand. Ask a third child to stand. Explain which child was first, which second and which third. Have another group stand and ask children which child was first, second and third. Pass our materials. Ask children to do the following tasks:

1. Make a row with the circles. Place the blue circle first.

2. Change the row by making the green circle first.

3. Make a row of circles. Place the blue circle second. Repeat with different colors.

4. Make a row of circles placing the orange circle third. Repeat but vary the color.

5. Review left and right by singing the Hokey Pokey song. Play the shake game.

Read the story and ask these questions:

1. What happened first?

2. What happened second?

3. What happened third?

Date: March 25, 1980 (14)

Category: Quantity

Function: Knowledge

Objective:

1. The student will demonstrate understanding of the word separated by placing the circles in a separated manner on the lid with 100 percent accuracy.

2. The student will demonstrate understanding of the word pair by placing a pair of yellow links inside the cup with 100 percent accuracy.

3. The student will demonstrate understanding of the word together by placing all the links together with 100 percent accuracy.

Vocabulary: separated, pair, together

Materials: Pictures of pairs from the Boehm kit, 3 yellow links, 5 circles

Story: Whistle for Willie by Ezra Jack Keats

Procedure: Explain the word separated by drawing several circles on the board in a separated manner. Explain that the circles are separated. Repeat with other figures. Explain that pair has two rules. The first rule is that a pair means two and the second rule is that a pair means two things that are alike. Draw a pair of circles on the board. Explain this is a pair. Pick out a child that has a pair of braids, another that has a pair of shoes or a pair of socks. Ask children to hold out a pair of hands. Demonstrate the

pictures of pairs from the Boehm Kit. Draw several cirlces on the board that touch. Explain that these circles are together. Ask several children to stand and hold hands. Explain that these children are together. Pass out materials and do the following tasks:

1. Take out each circle and place in on the lid. Place a pair of circles in the cup.

2. Take out the links and put the links together.

3. Separate the links.

4. Place the circles on top of each other. Then separate the circles.

Review quantity words using body movements and the shake game. Read story and ask these questions.

1. What happened first?

2. Was Willie separated from his master?

3. What happened last?

Date: April 9, 1980 (15)

Category: Quantity

Function: Interaction, knowledge

Objectives:

1. The student will demonstrate understanding of the word every by placing every object inside the cup with 100 percent accuracy.

2. The student will demonstrate understanding of the word less by holding up the chain with less links with 100 percent accuracy.

3. The student will demonstrate understanding of the word some by placing some links on the lid with 100 percent accuracy.

Vocabulary: every, less, some

Materials: Cup with lid, two red, blue, green links, one red block.

Story: Lyle Finds His Mother by Bernard Warbler

Procedure: Draw several circles. Draw a line through every circle. Explain that every circle has a line. Repeat with squares. Draw several more circles. Ask a child to draw a line through every circle. Draw a row of circles. Draw another row underneath with less circles. Explain that the bottom row has less circles. Ask two children to stand. Explain that one child is less tall than the other child. Make a chain of links. Make a chain with less links. Hold up both chains. Hold up both hands but fold down two fingers

on one hand. Explain that this hand has less fingers. Have all children do this. Put some links together. Have the children hold up some links. Pass out materials and have children do the following:

1. Take every object out of the cup.

2. Make a chain with two red links, one blue and one green link. Make another chain with the rest of the links. Hold up the chain with less.

3. Place some objects on the lid.

4. Review quantity words and play the shake game.

Read the story and ask the following questions.

1. Which picture has less trees?

2. What happened last?

3. Was Chaga surprised?

Date: April 10, 1980 (16)

Category: Quantity

Function: Knowledge

Objectives:

1. The student will demonstrate understanding of the word large by putting the large group of blocks on the lid with 100 percent accuracy.

2. The student will demonstrate understanding of the word medium by placing the medium group of blocks next to the large group with 100 percent accuracy.

3. The student will demonstrate understanding of the word small by placing the small group of blocks on the lid with 100 percent accuracy.

Vocabulary: small, medium, large

Materials: Cup with lid. Blocks--one white, two blue, four yellow.

Story: The Sky Was Blue by Charlotte Zolotow

Procedure: Draw three circles on the board, one small, one medium, and one large. Point to each and say the word. Repeat with squares. Stack three sets of blocks, one small, one medium and one large. Point to each and say the word. Mix colors and repeat. Pass out materials and have children do these tasks.

1. Have all children stand. Make a a small row, a medium row and a large row.

2. Have one child hold up a small stack of blocks. Have another child hold up a large stack. Have a child hold

up a medium stack. Repeat in this order.

3. Have class make a medium stack of blocks, then a small stack

4. Review and play shake game.

Read the story and ask these questions:

1. Which picture is small?

2. Which picture is large?

3. Which picture is medium sized?

Date: April 14, 1980 (17)

Category: Quantity

Function: Knowledge

Objectives:

1. The student will demonstrate understanding of the word whole by putting the whole amount of objects in the cup with 100 percent accuracy.

2. The student will demonstrate understanding of the word almost by putting almost all of the objects in the cup with 100 percent accuracy.

3. The student will demonstrate understanding of the word part by placing part of the objects inside the cup with 100 percent accuracy.

Vocabulary: whole, almost, part

Materials: Cup with lid, six blocks, two red, two blue, and two green.

Story: I'll Fix Anthony by Judith Viorst

Procedure: Draw three squares on the board. Fill one square completely in. Fill the next square almost full. Fill the other square partially full. Point to each square and say the word. Draw it again and have a child put an X on the square where the whole square is filled in. Repeat for other squares using other children and part and almost. Pass out materials and do the following tasks:

1. Have the whole class stand up.

2. Stack all the blocks. Have the class hold up the whole thing.

3. Restack the blocks. Have the class hold part of the blocks in their right hand.

4. Stack almost all the blocks.

5. Play shake game reviewing quantity concepts.

Read the story and ask the following questions:

1. Did Anthony get part of what he wanted?

2. Did Anthony get almost all of what he wanted?

3. What happened at the end?

Date: April 15, 1980 (18)

Category: Quantity

Function: Language Development

Objectives:

1. The student will demonstrate understanding of the word half by holding up half the circles with 100 percent accuracy.

2. The student will demonstrate understanding of the word wide by making a wide chain and placing it on the lid with 100 percent accuracy.

3. The student will demonstrate understanding of the word equal by making two equal chains with 100 percent accuracy.

Vocabulary: half, equal, wide

Materials: Cup with lid, two each red, yellow, blue links and two red circles.

Story: Little Fox Goes to the End of the World by Ann Tompert

Procedure: Draw three circles on the board. Draw a line through the center of two of them. Explain that these circles have two halves. Half means that both parts are the same. Draw a line through the third circle making two uneven parts. Explain that these two parts are not alike. This is not half. Repeat with other figures. Draw two boxes on the board. Make one box wide and the other narrow. Explain that this box is wide. Use room objects that are

wide for additional explanation. Draw the number "1" on the board and draw another "1" next to it. Explain that this is equal. Draw two circles exactly alike. Explain that these circles are exactly alike and they are equal. Equal means exactly the same in every way. Draw several sets of circles on the board. Ask a child to come up and put an X on the circles that are equal. Repeat for half and wide.

Pass out materials. Give the following directions?

1. Hold up the yellow links. Put half in the cup.
2. Make a wide chain of links.
3. Model two equal chain links. Have the children copy.
4. Place half of the circles in the cup.
5. Review using the shake game.

Read the story and ask these questions:

1. What happened first?
2. What happened second?
3. What happened third?

Date: April 21, 1980 (19)

Category: Quantity

Function: Knowledge

Objectives:

1. The student will demonstrate understanding of the word least by placing the pile that has the least links in the cup with 100 percent accuracy.

2. The student will demonstrate understanding of the word most by placing the chain with the most links on the lid with 100 percent accuracy.

3. The student will demonstrate understanding of the word narrow by placing the chain of links so that it makes a narrow line on the lid with 100 percent accuracy.

Vocabulary: least, most, narrow

Materials: Cup with lid, two each red, yellow, blue links

Story: Where is My Friend by Betsy and Guilio Maestor

Procedure: Draw several sets of circles. Draw a line through the set that has the least circles. Repeat with squares. Hold up both hands. Fold down two fingers on the left hand. Say the left hand has the least fingers. Have several children demonstrate least fingers. Draw two boxes on the board, one very narrow. Explain that this box is narrow. Use room objects for further explanation. Draw several sets of wide and narrow boxes. Have different children mark the narrow box. Draw several sets of circles. Mark the set that has the most circles. Repeat. Draw sets

of circles on the board. Have children mark the sets wide or narrow on instruction.

Pass our materials. Use these instructions.

1. Model two sets of links with unequal number. Hold up the set and say the right hand has the least number. Have children do this.

2. Have children place a set of links vertically on the lid after modelling it. Say this set is narrow. Have the children switch it to a wide set by placing it horizontally. Repeat.

3. Model a set of links that has the most links. Hold up the set that has the most taking care to mix colors. Repeat.

4. Review quantity words and play the shake game.

Read the story and ask these questions.

1. What page has the most pictures, this or this?

2. What happened first in the story?

3. What happened last?

Date: April 22, 1980 (20)

Category: Quantity

Function: Knowledge

Objectives:

1. The students will demonstrate understanding of the quantity concepts by completing the test with 100 percent accuracy.

Materials: test, pencils

Story: Alexander and the Terrible, Horrible Very Bad Day by Judith Viorst

Procedure: Place children at tables and pass out the test. Read the instructions. After the test is complete move children to lesson circle. Read the story. Ask various children if they liked the story and why or why not.

Date: April 28, 1980 (21)

Category: Time

Function: Knowledge

Objectives:

1. The student will demonstrate understanding of the word after by placing the green link in the cup after the blue link with 100 percent accuracy.

2. The student will demonstrate understanding of the word always by holding up the object that we always use (cup) with 100 percent accuracy.

3. The student will demonstrate understanding of the word before by taking the object out of the cup that was put in before the green link with 100 percent accuracy.

Vocabulary: after, before, always

Materials: Cup with lid, red, yellow, green and blue links

Story: No Roses for Harry by Gene Zion

Procedure: Draw a circle on the board. Place an X in the circle. Say after I drew the circle I drew the X. Repeat. Have a child stand up. Have another child stand up. Say "after Harry stood up, Betty stood up." Repeat several times. Write a child's name on the board. Say "we always make a capital letter to begin a name." Repeat. Ask children what we always do when we write someone's name. Give other examples such as we always eat lunch when we are at school. Pass out materials. Use the following tasks.

1. After you put the blue link in the cup, put the

red link in the cup.

2. Before you put in the yellow link, put in the blue link.

3. Ask what game is always played? Play shake game.

Read the story and use these questions?

1. Did Harry always like his sweater?

2. What happened after he lost his sweater?

3. What did the family do before Grandmother came to visit?

Date: May 2, 1980 (22)

Category: Time

Function: Knowledge

Objectives:

1. The student will demonstrate understanding of the word next by placing the next object in the row (blue block) in the cup with 100 percent accuracy.

2. The student will demonstrate understanding of the word sometimes by naming and modelling a direction that we sometimes do with 100 percent accuracy.

3. The student will demonstrate understanding of the word beginning by beginning a row of blocks with a red block with 100 percent accuracy.

Vocabulary: next, sometimes, beginning

Story: What Happens Next by Beatrice de Regneirs

Procedure: Draw a row of circles. Place a X in the second circle. Explain that the circle with an X comes next. Repeat with other figures. Have a child come to the board and mark the circle that comes next. Draw a set of circles. Put lines under some and over others. Explain that sometimes we put a line over and sometimes we draw a line under the circle. Draw a row of circles and put an X in the beginning circle. Explain that this circle is at the beginning. Repeat. Have child mark beginning circle. Pass out materials and do the following tasks.

1. Put two blocks together and put the yellow block next.

2. Make two rows of blocks. Begin one row with yellow, begin the other row with blue. Have children make three rows sometimes starting the row with yellow.

3. Review time concepts and play the shake game.

Read the story and ask the following questions:

1. What happened at the beginning?
2. What happened next?
3. What happened sometimes?

Date: April 29, 1980 (23)

Category: Space, quantity and time

Function: Interaction

Vocabulary:

Space	Miscellaneous	Quantity	Time
top	different	first	after
behind	match	second	before
inside	alike	third	always
around	other	separated	sometimes
between	skip	together	next
center		pair	beginning
side		every	never
above		some	
below		large	
in order		small	
next to		medium	
corner		wide	
far		narrow	
near		almost	
left		part	
away from		half	
right		whole	
forward		equal	
backward		least	
row		most	

Materials: Picture of skull and crossbones. Cup with lid, two each red, yellow, blue blocks, three each, red, yellow, green, blue links. One circle of red, yellow blue.

Prodedure: Show picture of skull and crossbones. Explain that this sign means something a child should never eat. List other things a child should never do or wear. Ask for other suggestions from the children. Pass out materials and include the following tasks:

1. Sing the Hokey Pokey for left and right.
2. Using combinations as necessary review each word.
3. Finish with shake game.

Date: May 5, 1980 (24)

Category: Space, quantity, time

Function: Knowledge

Objective:

1. The student will complete the Boehm Test of Basic Concepts with 80 percent accuracy.

Materials: Test booklets

Procedure: Administer the test according to test instructions.

Test 1

Materials:

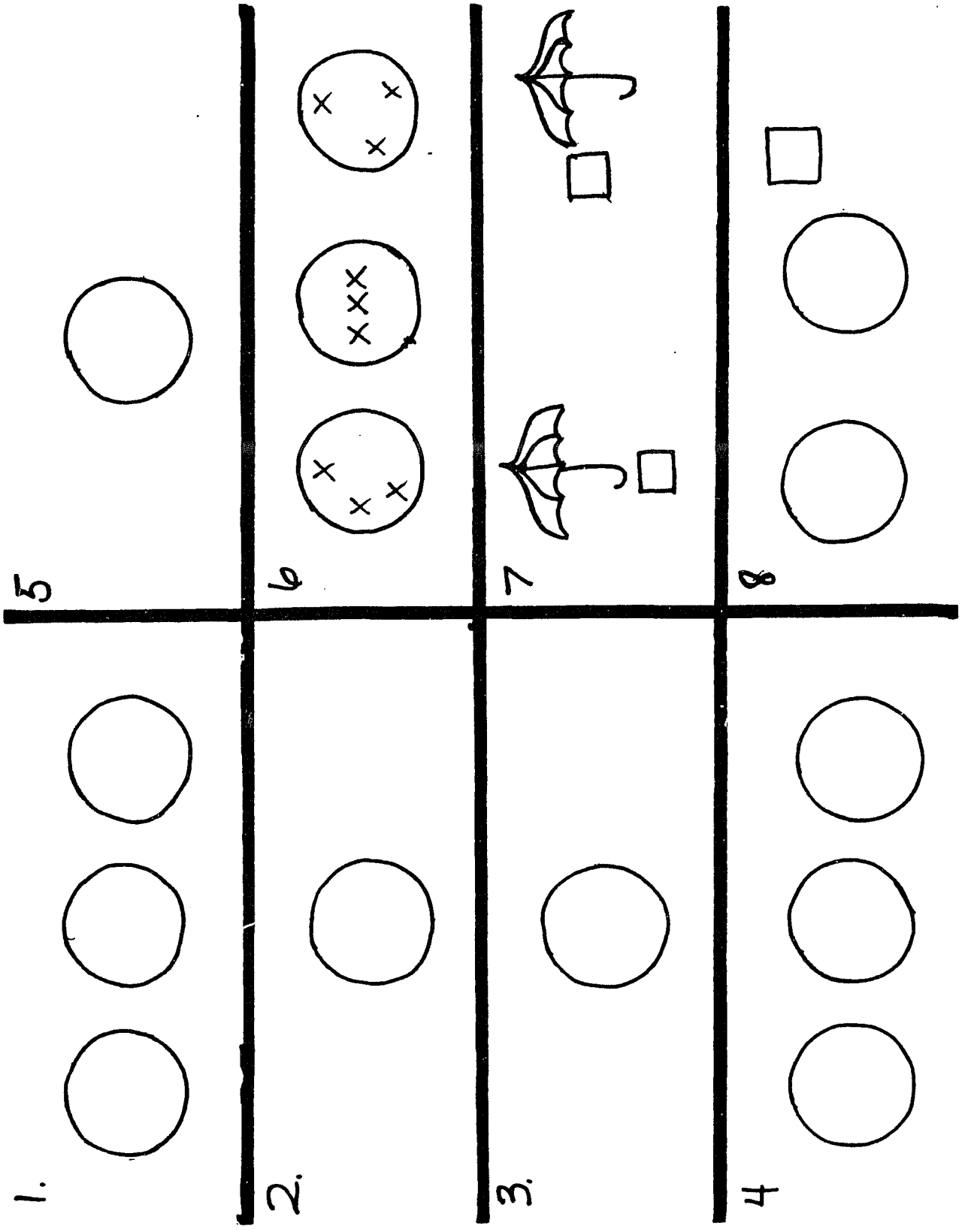
1. Envelope containing brown tree trunk, green tree top, flower, butterfly, fruit, two leaves similar in shape, one leaf in a different color and shape, sun, rays.
2. One sheet of blank typing paper
3. Paste

Directions:

1. Paste the tree trunk on the other sheet of paper.
2. Paste the top part of the tree on the trunk.
3. Paste the flower inside the tree.
4. Paste the butterfly behind the tree.
5. Paste the sun between the top of the paper and the tree.
6. Paste the two leaves that match in shape on the tree.
7. Paste the things that are alike around the sun.
8. Paste the leaf that is different on the tree.
9. Skip over the tree and write your name.

Test 2

1. Put an X at the top of the circle that is in the center.
2. Put an X on the side of the circle.
3. Put an X above the circle.
4. Put an X on the circle that has a line through it.
5. Draw a line below the circle.
6. Draw a line under the circle that has X's in a row.
7. Draw a line under the box that has an umbrella over the box.
8. Put an X on the circle that is nearest the square.
9. Put an X on the left of the circle.
10. Put an X on the circle that is away from the tree.
11. Draw an X in the corner of the box.
12. Draw a circle on the right side of the line.
13. Draw an X on the circle that is farthest from the square.
14. Draw an X next to the square.
15. Put an X at the top of the circles that are in order.
16. Put an X on the boy that is bending forward.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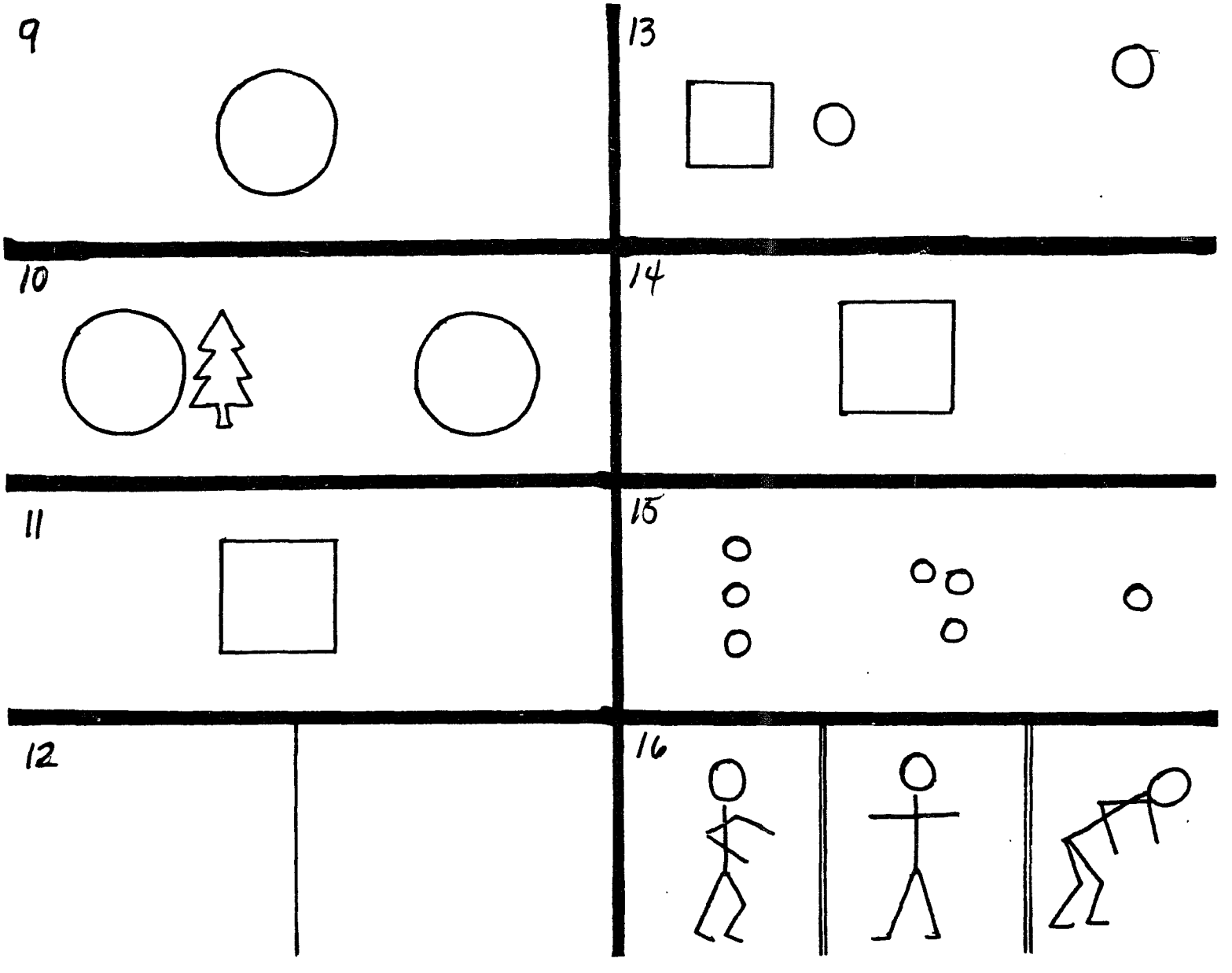
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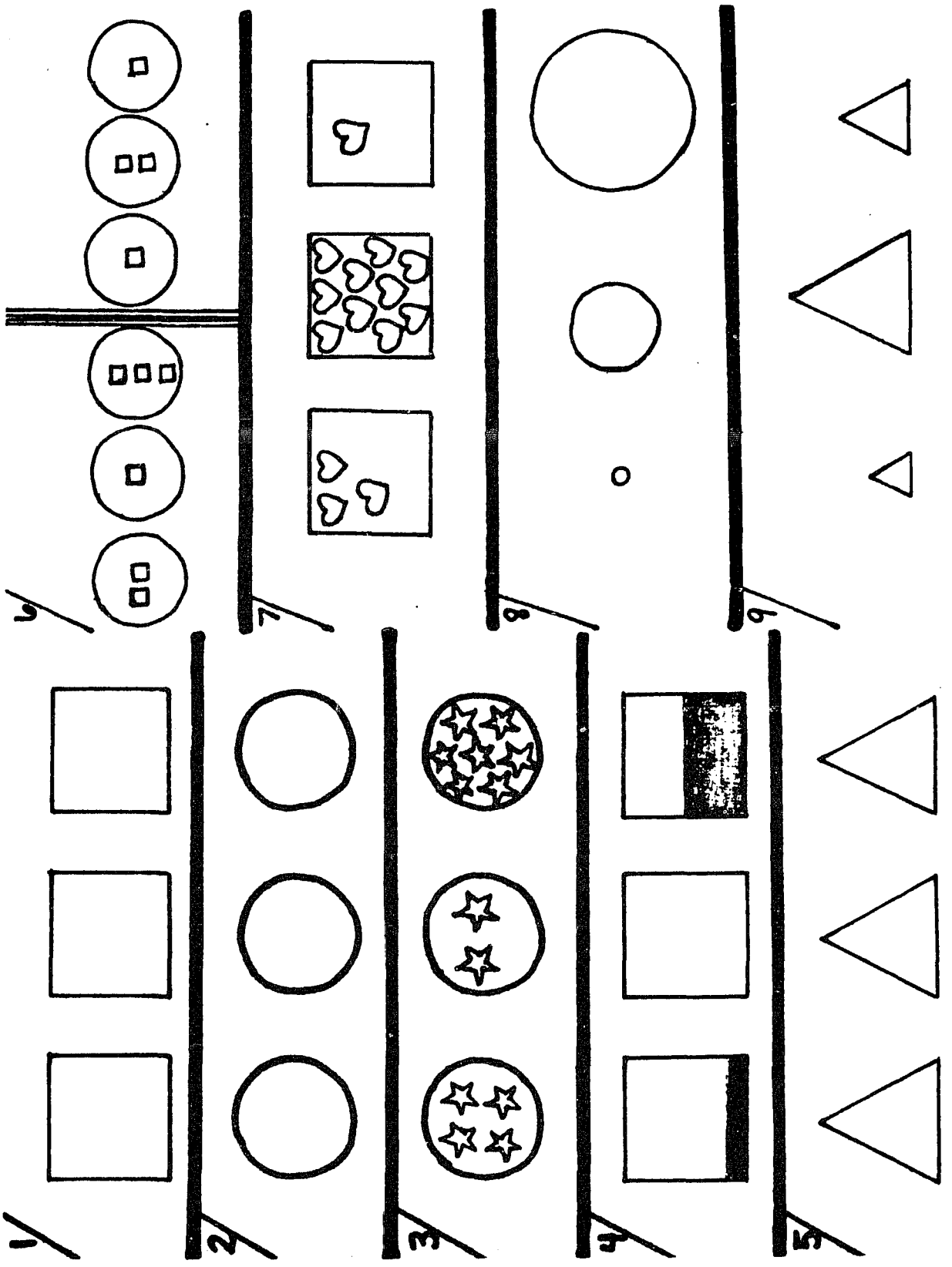
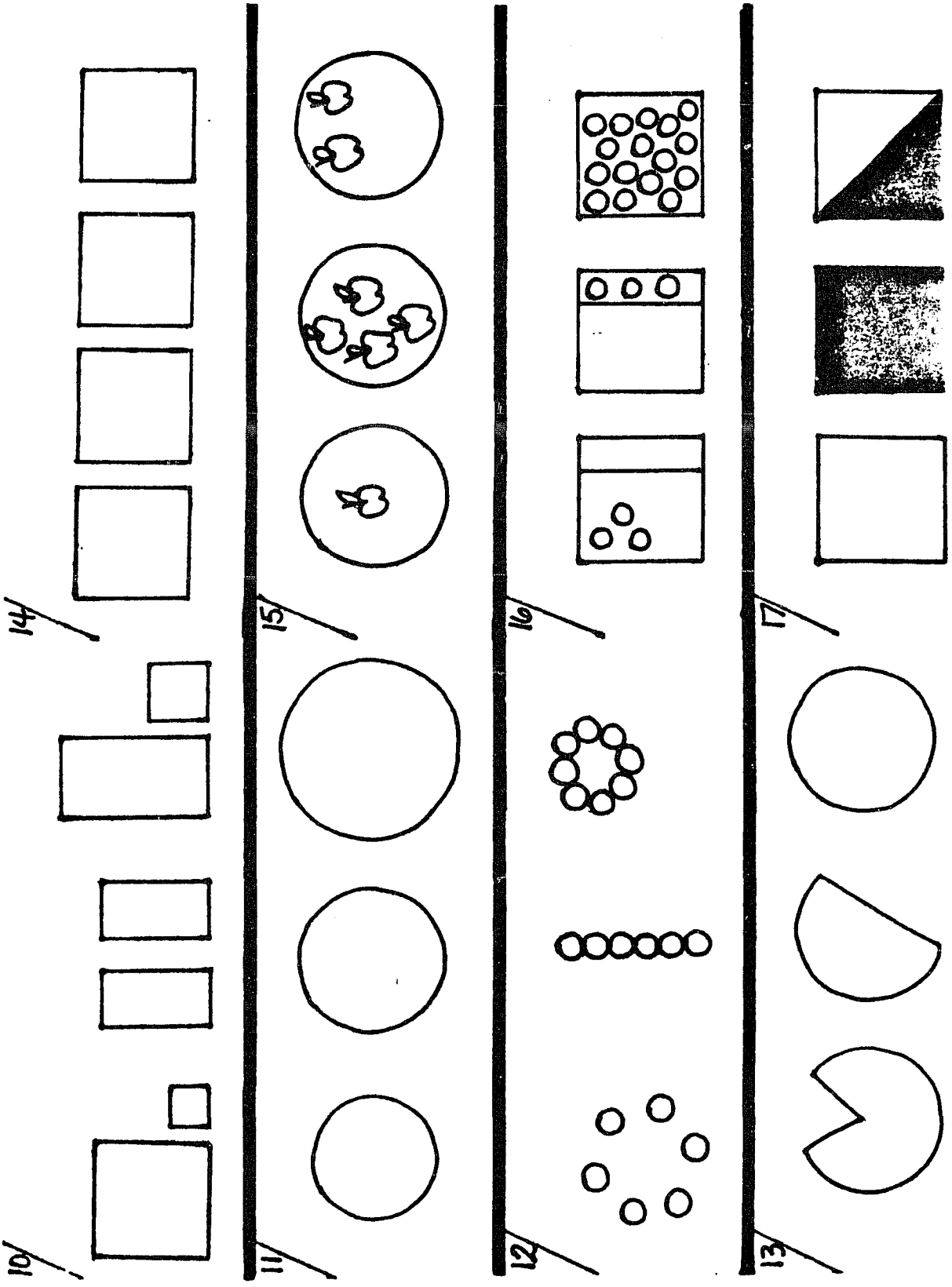
TEST 3

1. Put an X on the second box from your finger.
2. Put an X on every circle.
3. Put an X on the circle that has the least (number/ amount of) stars.
4. Put an X on the square that is half full.
5. Put an X on the triangle that is last.
6. In this row there are 2 groups of circles. Put an X on the group that has a pair of squares in the first circle.
7. Put an X on the square that has several hearts.
8. Put an X on the large circle.
9. Put an X on the medium circle.
10. Put an X on the boxes that are equal.
11. Put an X on the biggest circle.
12. Put an X on the circles that are separated.
13. Put an X on the circle that is whole.
14. Put an X on the third square.
15. Put an X on the circle that has the most apples.
16. Put an X on the square that has some circles in the widest part.
17. Put an X on the square that has part filled in.

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February 1, 1980

Dear Parent:

Part of the requirements for my doctoral degree in education at Louisiana State University is a kindergarten project. This project will consist of one hour of instruction each week for twelve weeks. This instruction is designed to teach the prereading concepts of space, quantity and time. I will be working with your child's teacher using stories, games, art and music to teach these concepts. At the end of twelve weeks the children will take a one-half hour test to see if they have learned these concepts.

The university requires that every parent be notified about the project and give permission for their child to participate. The necessary form is attached to this letter. Please sign the form and return it to your child's teacher tomorrow. I will also need your permission to look at your child's folder to see if he attended preschool. In addition, I need to know the number of years of school completed by his mother.

If you have any questions about this project please call me at 272-6686. Thank you for your help with this project. I am looking forward to teaching your child.

Sincerely,

Dorothy E. Carlson

DC:jmp

Attachment

(Treatment School)

April 1, 1980

Dear Parent:

Part of the requirements for my doctoral degree at Louisiana State University in reading and early childhood is a kindergarten project. The university requires that every parent be notified about the project and give permission for their child to participate. The necessary form is attached to this letter. Please sign this form and return it to your child's teacher tomorrow. This will also give me permission to examine your child's folder for the following information: whether he attended preschool and what grade in school was completed by his mother.

The project will involve giving a one-half hour test to the entire kindergarten class in April. This test will check to see if your child understands concepts of space, quantity and time. If you have any questions about this project please call me at 272-6686. Thank you for your help.

Sincerely,

Dorothy Carlson

DC:jmp

Attachment

(Control School)

PH. (504) 926-2780

East Baton Rouge Parish School Board

CLYDE H. LINDSEY, SUPERINTENDENT

P. O. BOX 2950

Baton Rouge, Louisiana 70821

January 9, 1980

Mrs. Dorothy Carlson
1442 Havenwood Drive
Baton Rouge, Louisiana 70815

Dear Mrs. Carlson:

This letter will serve as your authorization to conduct a study using Piaget techniques with kindergarten students. It is our understanding that the study will consist of twenty-four, thirty minute lessons during February, March, and April, 1980 and that following the study, the students will be tested with the test results being made available to the schools involved.

The principals of the schools have been contacted and have agreed to participate.

Treatment Schools	Principal
Belfair Elementary	Mr. W. B. Chrisentery
Dufrocq Elementary	Mr. Gabriel Jumonville
Greenbrier Elementary	Mr. Henry Denham

Control Schools	
Fairfields Elementary	Mrs. Deloris Holmes
Reddy Elementary	Mr. Clarence Hayes
Park Forest Elementary	Dr. Evelyn N. Conerly

If we can be of further service, please contact this office.

APPROVED:

Lorin V. Smiley, Asst.
Superintendent
Management and Planning
Services

Sincerely,

D. L. Hoover

Donald L. Hoover, Director
Research and Program Evaluation

DLH:crt

cc: Mr. Chrisentery
Mr. Jumonville
Mr. Denham
Mrs. Holmes
Mr. Hayes
Dr. Conerly
Dr. Lindsey
Dr. Newkome

From: Date:

To:

Subject: Request for research approval

Title of Research Project: _____

_____

The attached description of a project entitled _____

_____

_____

will involve the use of human subjects.

The investigator gives assurances to the committee on use of humans and animals for each of the following:

		Yes	No
1.	The human subjects are volunteers.	_____	_____
2.	Subjects have the freedom to withdraw at any time.	_____	_____
3.	That the data collected will not be used for any purpose not approved by the subjects.	_____	_____
4.	The subjects are guaranteed anonymity.	_____	_____
5.	The subjects will be informed beforehand as to the nature of their activity.	_____	_____
6.	The nature of the activity will not cause any physical or psychological harm to the subjects.	_____	_____
7.	Individual performances will not be disclosed to persons other than those involved in the research, those authorized by the subject.	_____	_____
8.	If minors are to participate in this experiment, valid consent has been obtained from the parents or guardian.	_____	_____

	Yes	No
9. That all questions have been answered to the subject's satisfaction.	_____	_____
10. All volunteers will consent by signature.	_____	_____

Any exceptions or qualifications to the above assurances are explained below:

_____

_____

_____

_____

_____
Investigator's Name

VITA

Dorothy Ellis Couillard Carlson was born November 23, 1933, in Richmond, Virginia. Mrs. Carlson received her Bachelor of Arts in history, government and economics from Colby College in 1955 and a Masters of Education degree from the University of Missouri-St. Louis in reading in 1970.

While pursuing graduate credits, Mrs. Carlson worked as an elementary teacher in San Antonio, Texas, as a reading clinician in St. Louis, Missouri, as a reading instructor at Meramec Junior College, as a reading coordinator for the Right to Read Program at the Louisiana State Department of Education and as the Coordinator/Director of a Special Reading Project for the Louisiana State Department of Education.

Mrs. Carlson is married to Raymond M. Carlson and has three children.

EXAMINATION AND THESIS REPORT

Candidate: Dorothy Ellis Carlson

Major Field: Education

Title of Thesis: A Study of Reading Achievement in Terms of Various Background Factors

Approved:

Martha C. Cheek
Major Professor and Chairman

James D. Ironnham
Dean of the Graduate School

EXAMINING COMMITTEE:

Zoe Ann Sparks

Sam Adams

Earl Cheek, Jr.

Marilyn Reiding

Eric L. Hunter

Date of Examination:

July 18, 1980